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THE COMMISSION ON SECONDARY SCHOOLS OF THE ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS OF THE MIDDLE STATES AND MARYLAND

The Commission on Secondary Schools of the Association of Colleges and Secondary Schools of the Middle States and Maryland met on April 2. The membership of the commission consists of Dean Herbert E. Hawkes, Columbia University; George William McClelland, vice-provost, University of Pennsylvania; Radcliffe Heermance, director of admissions, Princeton University; L. L. Jackson, assistant commissioner of secondary education, New Jersey State Department of Education; Miriam A. Bytel, headmistress of St. Mary's School, New York City; John H. Denbigh, principal of the Packer Collegiate Institute, Brooklyn; Thurston Davies, headmaster of the Nichols School, Rochester, New York; Richard M. Gumere, headmaster of the William Penn Charter School, Philadelphia; William A. Wetzel, principal of the Senior High School, Trenton; David E. Weglein, superintendent of schools, Baltimore; and E. D. Grizzell, University of Pennsylvania, *chairman*.

The entire commission was present at the meeting, and a definite statement of policy and general administrative procedure was formu-

lated and adopted. The commission adopted a state-committee plan similar to that of other accrediting associations. Each state committee will consist of a resident member of the commission, a public high school principal, a private secondary school headmaster, a registrar or director of admissions of a higher institution, a professor of secondary education, a member of the state department in charge of secondary education, and the chairman of the commission, *ex officio*. New Jersey, Delaware, Maryland, and the District of Columbia will each have a state committee as indicated; New York and Pennsylvania will each have two state committees, the state department official and the chairman of the commission serving on both committees. This modification of the state-committee plan for these two states seems desirable because of the large number of schools in each and the wide geographical distribution of the schools.

As a result of the great increase in enrolment in colleges and universities within the past few years, there is imperative need for an accredited list of secondary schools which will aid these schools in establishing contacts with higher institutions. The demand for a reliable list of accredited schools is coming with greater force each year from higher institutions. There is need also for an active agency to study the problems confronting the secondary schools of the middle states. The commission hopes to function in the threefold capacity of an agency for (1) articulating secondary schools and higher institutions, (2) establishing and maintaining an accredited list, and (3) promoting research for the solution of problems in secondary education in the region represented by the association.

A central office has been established for the commission and placed under the direct control of the chairman. Much preliminary work has been done. A complete directory consisting of 3,393 public and private secondary schools has been compiled. This large number of schools reveals the extent of the problem of accrediting in this territory. The commission plans to proceed at once through the central office in establishing contacts with the schools. Information concerning any phase of the work may be secured by communicating with the chairman of the Commission on Secondary Schools, E. D. Grizzell, 109 Bennett Hall, University of Pennsylvania, Philadelphia.

HIGH-SCHOOL PRINCIPALS' CONFERENCE

The University of Indiana has published through the Bureau of Co-operative Research of the School of Education the papers presented at the last annual conference of the high-school principals of the state. The pamphlet of proceedings is entitled, *High School Principals' Conference*. It may be purchased for fifty cents from the University Bookstore, Bloomington, Indiana.

Among the papers is one on supervision contributed by A. W. Heavin, principal of the Fillmore High School. Several of the items covered in this paper may be quoted as typical of the pamphlet as a whole.

4. Weekly Teachers' Meetings. These should be held on Monday immediately at the close of the school day. I prefer Monday because it seems to bring up more problems than any other day, and the principal has more time over the week-end to think of problems for consideration. Only school problems should be discussed; dry pedagogical assignments should be avoided; and each meeting need not last longer than about twenty minutes. Interest and speed may be gained by adhering strictly to the point of discussion.

5. The principal may be of especial benefit to his teachers by handing out literature of both an academic and pedagogical nature.

6. Use of Standardized Tests. By the use of standardized tests the principal as well as the teacher can determine in a few minutes' time pupil difficulties. These tests may point out defects both in content and in method of presentation. They are fast becoming one of the principal instruments of scientific supervision.

10. Use of Teacher's Self-Improvement Sheet. I strongly recommend the use of an improvement sheet similar in form to that made out by the State Department of Public Instruction for determining the success grade. I am confident that, if each teacher would check herself up at least once each month by an outline such as this, her weak points would be much improved, if not eliminated.

11. The principal should teach as many different pupils as possible in the courses that he is to teach. If four is to be the number of courses he is to teach, it would be much better to teach the ninth, tenth, eleventh, and twelfth grades one course each than to teach two courses to the tenth grade, two to the eleventh grade, and none to the ninth and twelfth grades. The purpose of such a distribution of his courses is to acquaint himself with more pupils so that when he is supervising he can talk intelligently about each individual pupil.

12. He must continually give ear to his environment both within and without the school. He is likely to hear expressions which demand immediate attention. Too many school men think that parents should remain silent about school

affairs, not "butt in," as they say. But they must not forget that they are paid by the taxpayer and the taxpayer is, therefore, entitled to his own opinion. His opinion may be worth consideration.

A PUPIL-PERSONNEL PROGRAM

In 1923 the LaSalle-Peru-Oglesby schools, Illinois, engaged an educational counselor and established a Bureau of Educational Counsel. This was done with the aid of the Institute for Juvenile Research, Chicago, and the co-operation of several local organizations, such as the Tri-City Family Welfare Society. The main purpose of the bureau is to study the individual pupil, his abilities and behavior and the development of his personality. The program of operation includes also educational, vocational, health, social, and ethical guidance.

At first, the bureau concentrated attention on pupils of superior endowment, high general scholarship, and special abilities. The purpose of this wise beginning was to avoid any possible stigma attaching to "contacts" with the bureau; the result naturally was that contacts were sought voluntarily by other pupils and by other young people in the community. During the three years from 1923 to 1926 more than three thousand individuals, approximately one-tenth of the population of the entire school district, were served by the bureau, some of them as many as eighteen times, with an average of about five contacts per person.

When the bureau first comes in contact with a pupil, intelligence tests are given, and the pupil is asked to fill out a questionnaire. A study is also made of the pupil's school record. The second contact, a forty-five-minute individual interview concerning such topics as scholarship, health, hygiene, interests, ambitions, and behavior, is described by the secretary as follows:

The secretary has prepared a face sheet giving name, address, year in school, course, number of credits, sex, race, religion, date of birth, date of entering this school, former schools attended, years in each with average grade, grades repeated, grades skipped, possible work after school, type of work, school activities, names, ages, and occupations of all members of the family, and language spoken at home. Attached is the scholarship record card giving results of intelligence tests and, if the student is an upper classman, a record of all grades received in each school subject. Valuable in making the approach are the personality blanks which have been checked by each of the student's teachers. The

composite results of these checks are a rough index to the type of personality revealed by the student in his everyday school contacts.

Such an appraisal brings a student face to face with his actual status. Obstacles to a healthy adjustment are brought to the attention of the individual and analyzed so that he may better understand the deterring part they play in the socialization of personality and its adjustment to academic and vocational requirements. A definite statement of facts wisely presented not only assists the unoriented student to find himself but serves as a basis for serious thought and constructive improvement.

The third contact takes the form of a health discussion in groups.

The approach is made through the subjects of personality and behavior. Freshmen and Sophomores, who are reached in small informal groups of about thirty, are first given personality blanks which furnish material for general discussion. Occasionally an entire class period is devoted to the discussion of one trait, as excuse-forming or day-dreaming, when the mechanisms involved are simply explained. The groups of upper classmen are larger, and the talks are presented more formally, but the subject-matter is the same. Regardless of size of group or of its age-level, the main aim of the talks is to cause the students to think in terms of personality and behavior—to make them personality-conscious. The psychiatric aspects of the subject are given by the psychiatrists from the mental health service of the school, who address student groups from time to time.

In the course of the first three contacts superior pupils are chosen for special social treatment. This is of two types: individual guidance through interviews and psychiatric social case work. The latter is seldom needed in the case of pupils who have a high degree of normality.

From the various contacts emerges educational guidance directly applicable to immediate and deferred schooling. Vocational guidance, also an objective, largely takes the form of information that may assist in occupational choice. Other outcomes are various forms of health, social, and ethical guidance, the last concerned primarily with the development of personality and conduct. The most common phases of personality reconstruction attempted are:

1. Developing the self-conscious, inadequate personality whose feelings of inferiority may or may not have a real basis.
2. Reducing egocentric tendencies in the student whose self-estimate is too high.
3. Stimulating to greater action the day-dreamer, who is rich in vision but poor in genuine achievement.

4. Broadening the childish immature personality from unreasonable, excuse-forming tendencies.
5. Widening the interest-scope of the narrow individual unresponsive to stimuli and inflexible in reaction.
6. Substituting adequate compensations for unsatisfactory defense mechanisms.
7. In general, attacking the unhealthy personality traits and undesirable emotional habits that they may be replaced by more favorable ones.

Naturally, the results of such a program cannot be tabulated or statistically treated. In the final analysis, success must depend on the training, skill, and personality of those who conduct the bureau. Superintendent Thomas J. McCormack and Emma Olson, the educational counselor, are to be commended for their admirably conceived and conducted pioneer experiments. The \$5,000 a year necessary for such work might well be added to the budget of any educational system comparable in size with the LaSalle-Peru-Oglesby schools.

BASES OF RECOMMENDATION TO COLLEGE IN NEW JERSEY HIGH SCHOOLS

A report contributed by Chester Robbins, principal of the high school at Bridgeton, New Jersey, to the *Education Bulletin*, published by the Department of Public Instruction of the state of New Jersey, describes the views of a number of high-school principals regarding the proper basis of recommendation for admission to college. This report is encouraging as an exhibition of the growing consciousness on the part of high-school administrators that recommendation for admission to college involves responsibility for the proper adjustment of pupils and educational opportunities. Nothing could be more disastrous from an educational point of view than the adoption of the practice sometimes advocated by radicals of admitting to college all students who graduate from high school regardless of what these students have taken in high school or of how well they have done their work there.

The report is as follows:

Most colleges hold a high-school principal responsible for determining the ability of a graduate to do college work. In discharging this responsibility, the principal must be fair to the pupil, to his school, and to the college. Experience shows that every high-school graduate is not prepared for college. The problem of the principal is to decide whom he will recommend to college.

In fairness to the pupil, the principal should announce in advance the standards of attainments the pupil will be required to reach in order to receive the recommendation of the high-school principal. It was considered wise, therefore, to set standards of attainment for recommendation to college from the Bridgeton High School and to explain them carefully to pupils and patrons.

It has become the practice of school executives in formulating policies to consult with other executives to see what light their experience will throw upon a particular problem. Therefore, the principals of several high schools in the state were asked to answer the following questions:

What is the passing grade of your school for credit?

What is the grade required for recommendation to college?

Remarks:

Replies were received from forty high schools. From the nature of the communities in which these schools are situated, it is reasonable to assume that the problem of college entrance is very important in all of them. The replies revealed the following information concerning the marks required for recommendation to college:

Upper half of class.....	2
20 per cent higher than passing.....	2
15 per cent higher than passing.....	1
10 per cent higher than passing.....	26
8 per cent higher than passing.....	1
5 per cent higher than passing.....	4
Mere passing grade.....	2
Each case determined individually.....	2

The questionnaires revealed the following practices in some high schools in New Jersey.

1. It is customary to give those pupils who are below standard a statement of their work. It is the practice to inform the college that it is taking its own risk if it accepts a pupil who is below the standard of the school.
2. Exceptions are made in individual cases. This is especially true in case a pupil intends to enter a college whose entrance requirements are not high.
3. A pupil who is below the standard in one subject may be recommended if he is in the upper half of his class.
4. The work of the last year is considered a very important evidence of the pupil's fitness for college.
5. It is the practice in some schools to give practice college-entrance examinations for the pupils who intend to take these examinations or desire a blanket recommendation to college.
6. There is a tendency to require a higher standard for college-entrance examinations than for ordinary college entrance.

TEACHING LOADS IN HIGH SCHOOLS

Joseph A. Baer, of the Ohio State University, has brought together and published in the *Educational Research Bulletin* (Ohio State University) interesting facts regarding the teaching loads in

high schools in Ohio. Tables I, II, and III report the facts which he collected. Mr. Baer's comments on these facts are as follows:

TABLE I
TEACHING LOADS OF HIGH-SCHOOL TEACHERS IN
CERTAIN OHIO CITIES

Pupil-Clock-Hours per Week	Men	Women	Pupil-Clock-Hours per Week	Men	Women
1,250+	17	9	550-599	71	87
1,200-1,249	2	2	500-549	88	116
1,150-1,199		4	450-499	64	129
1,100-1,149	1		400-449	52	104
1,050-1,099	2	2	350-399	27	51
1,000-1,049	1	1	300-349	10	26
950-999	1		250-299	11	18
900-949	3	1	200-249	13	19
850-899	8	5			
800-849	9	8	Total	509	724
750-799	17	17	Median	544	506
700-749	25	26	Q ₁	643	596
650-699	34	46	Q ₂	461	432
600-649	53	53			

TABLE II
TEACHING LOADS OF HIGH-SCHOOL TEACHERS IN
CERTAIN OHIO CITIES

SUBJECT	MEN		WOMEN	
	Total Teachers	Median Pupil-Clock- Hours per Week	Total Teachers	Median Pupil-Clock- Hours per Week
Art	6	650	41	510
Biology	16	610	16	575
Chemistry	35	529	5	425
Commercial subjects	15	563	5	325
English	44	532	223	508
French	6	450	48	460
General science	25	538	14	500
History	56	556	71	543
Home economics			64	490
Industrial arts	33	525		
Latin	4	450	67	488
Manual training	85	531		
Mathematics	89	549	70	525
Music	16	625	13	775
Physical education	20	1,200+	29	838
Physics	40	545		
Spanish	9	513	36	460
Miscellaneous	10	500	22	471
Total	509	544	724	506

TABLE III
TEACHING LOADS OF JUNIOR HIGH SCHOOL
TEACHERS IN CERTAIN OHIO CITIES

Pupil-Clock-Hours per Week	Men	Women	Pupil-Clock-Hours per Week	Men	Women
1,250+	9	12	550-599	32	100
1,200-1,249	1	12	500-549	23	56
1,150-1,199	1	2	450-499	28	41
1,100-1,149	2	1	400-449	17	22
1,050-1,099	4	5	350-399	19	16
1,000-1,049	4	12	300-349	16	11
950-999	1	9	250-299	5	8
900-949	3	9	200-249	27	25
850-899	7	21			
800-849	9	40	Total	285	641
750-799	12	36	Median	562	622
700-749	8	43	Q ₃	672	749
650-699	18	66	Q ₁	363	524
600-649	39	94			

The teaching load expressed in pupil-clock-hours does not tell the whole story concerning the teacher's educational activities, but it is the most definite means of objectively measuring what the teachers do. The data presented show a very wide variability among men and among women, between men and women, and in the various subjects of the high schools. It is very doubtful whether these wide variations can be justified on any grounds other than the present convenience of those responsible for the organization of the school program.

PUPIL PARTICIPATION AND TEACHER PARTICIPATION IN CLASSROOM EXERCISES

In an article in the *Educational Research Bulletin* published by the Los Angeles city schools, Professor Raymond G. Drewry, of the University of Southern California, reports observations which he made in twenty-six classrooms in five high schools. He observed class exercises in English, general science, biology, German, algebra, geometry, United States history, medieval history, and community civics. His findings and conclusions are as follows:

The twenty-six classes visited ranged in size from nineteen to forty-one, the mean or average size being twenty-eight. In only two of the classes was there 100 per cent participation—a spoken contribution by every member present. The smallest participation was found in a class of twenty-seven members, where only twelve took any part. Between this range of 44 per cent to 100 per cent participation there was a mean of 72.2 per cent. The S.D. was 16.35 per cent.

In twenty-five of the twenty-six classes visited, the question-answer type of recitation was used. The pupil activity consisted largely in giving answers to

questions which the teachers liberally and fluently dispensed. The willingness of pupils to volunteer answers was evident in all classes observed. The number of questions answered by volunteers ranged from 1 in one class to 75 in another, with the mean at 25.3. The number of answers which came as a result of "drafting" ranged from 1 to 93; the mean was 40.6. The total number of answers of both kinds ranged from 2 to 146, with the mean at 65.9. The mean number of questions answered per pupil ranged from .09 in a geometry class to 5.62 in a German class. The teacher of this geometry class found it necessary to ask only two questions during the entire class period. Almost the entire activity was in the class.

Careful record was made of the contributions which were entirely voluntary and in no sense drawn forth by any question from the teacher. In seven classes, constituting 27 per cent of those observed, there were no such contributions. The highest number of such contributions found in any class was 14, found in the geometry class previously mentioned. The mean number of voluntary contributions was 2.54 per class.

When the responses to questions and voluntary contributions are combined, a range of 16 participants in one class to 147 in another is obtained. The mean number of responses per class was 68.46 and the S.D. 29.07.

A rather undistributed assumption of duties is discernible when it is noted that in ten classes 10 or more contributions were made by an individual pupil. In these same classes there were from 4 to 19 students who took no part. In one class where a single pupil recited 11 times there were 19 who took no part.

In four classes, constituting 15.4 per cent of those observed, there was not a single question asked by the pupils. The highest number of questions asked by pupils in any class was ten, three of which were asked by one individual. The mean number of questions asked by pupils was 2.88 per class.

Conclusions.—The typical classroom performance witnessed may be described as a barrage of questions by the teacher, with the pupils returning fire with hastily recalled bits of information previously garnered from a textbook. Succeeding in doing this, the pupils preferred to remain on the defensive, offering few voluntary contributions on aims, methods, or materials. It would seem that the classes under consideration might have been productive of more valuable results had the testing procedure been less zealously adhered to and more conscious and definite effort been made to provide situations in which pupils could grow in other desirable respects. No opinion regarding class policy, no voluntary co-operative act, and no bit of participation should be too insignificant to accept if through encouragement and satisfaction they can be developed into elements of good citizenship in a democracy.

CURRICULUM REVISION AND COLLEGE- ENTRANCE REQUIREMENTS

WILLIAM MARTIN PROCTOR
Stanford University

There has been a widespread impression among secondary-school principals that their freedom in the matter of curriculum revision is distinctly limited by the necessity of meeting college-entrance requirements. This has been the reason for a number of recent investigations. The writer was appointed chairman of a subcommittee of the National Committee on Research in Secondary Education organized to make an exhaustive survey of the relation between college-entrance requirements and efforts to reorganize the secondary-school curriculum. It is the purpose of our committee to take up the matter from the standpoint of both the college and the secondary school.

From the colleges we want to learn their prevailing methods of admission; what changes in the direction of the liberalization of their requirements they have made during the past five years; their attitude toward the vocational subjects and the other new subjects of the high-school program of studies; whether they would favor admitting to college on the basis of twelve units earned in the tenth, eleventh, and twelfth grades; and what their reaction would be to a plan of admission based on rank in graduating class, regardless of type of subjects studied, provided such scholarship rating is supplemented by a satisfactory score on a college aptitude test, such as the Thorndike, and a high rating on a personality test.

From the high schools we hope to secure data on their graduation requirements; whether they have made any effort within the past five years to reorganize their programs of study in the light of the recommendations of the Commission on the Reorganization of Secondary Education; if so, what success they have had and what obstacles they have encountered; if not, what causes have operated to prevent or discourage efforts at reorganization. We are also anxious to determine the extent to which the vocational subjects and other

new subjects, if offered, are being elected by the pupils and the influences at work encouraging or discouraging such election.

When the data from these two sources have been gathered, we are hoping that considerable light will be thrown on at least two phases of the problem: (1) whether the colleges are tending toward a more liberal policy so far as specific subject requirements are concerned and are thus prepared to grant autonomy to the high schools in the reorganization of their curriculums; (2) whether the high schools are really taking advantage of all the freedom they now have.

In the meantime, some of the preliminary studies that are being carried on and some of the experiments that are being tried that have a bearing on the college end of the admission problem may be described.

It will probably be admitted without debate that the colleges must select their students. In the twelve-year period from 1913 to 1925 there was an increase of 212 per cent in high-school pupils and of 305 per cent in college students. Thus, relatively, college students are increasing in number faster than secondary-school pupils. In other words, the percentage of high-school graduates going to college is increasing steadily. Not all who want to go are qualified to do college work; hence the need for selection.

The basis of selection is the point at issue between the colleges and the high schools. Methods that have prevailed in the past have been the entrance examination and the accrediting or certification plans. The examination method, best exemplified by the College Entrance Examination Board, is the simplest and entails the least effort and responsibility on the part of the college. With certain modifications, it has been the prevailing method in the eastern states. The disadvantage of this method is that it limits those who plan to go to college to the list of subjects in which the board offers examinations and tends to turn public high schools into mere coaching schools, where the candidates for college admission receive the lion's share of attention. The various certification or accrediting plans have been most prevalent in the western and Pacific Coast states. Such plans have meant a considerable liberalization of college-entrance requirements and the acceptance of a number of new subjects as a part of the fifteen required secondary-school units. There still

remains, however, a very strong prejudice on the part of college officials against the newer subjects of the high-school curriculum. This results in the setting up of departmental prerequisites and specific subject prescriptions which tend to nullify the apparently liberal general admission requirements of the various colleges.

What is really needed is a basis of selection which will provide the college with students having superior ability and possessing such habits of industry, attitudes toward life, and basic training that the college can afford to spend its resources on them with some assurance that individual and social benefit will result. What the high school wants is freedom to develop its program of studies in such a way as to provide the greatest good for the greatest number and the best possible returns to the community and the state in which the high school is located. It ought to be possible to devise a plan of college admission that would meet the needs both of the college as a center of research and advanced learning and of the high school as an institution primarily devoted to the individual needs of its pupils and the social and educational needs of the community.

Since actual experiment has greater significance than any amount of theory, a brief statement may be made of what is being done by a great university which has set definite limits to its student body and is compelled to make drastic selection among those applying for admission.

The policy of Stanford University since its foundation has been to consider that "whatever is properly a high-school subject is to that extent proper and effective preparation for university study; that the high-school curriculum is primarily a subject for determination by secondary-school men; and that, aside from insisting on high standards, the university should avoid all intent and appearance of dictation."¹ This statement may be called David Starr Jordan's declaration of faith in the ability of the secondary schools to work out their own salvation if given the freedom to do so by the colleges.

Stanford University has not only preached secondary-school autonomy for more than thirty years but has been practicing the doctrine in the admission of students in the following ways.

¹ David Starr Jordan, *Fourth Annual Report of the President, Leland Stanford Junior University*, p. 88. Trustees Series No. 15, 1907.

1. No set pattern of high-school subjects is required for admission. The only definite prescription is two units of English. The remaining thirteen units may be made up in any way that meets the requirements of the high school from which the applicant for admission comes. Thus, students offering as many as seven units of so-called "practical" or vocational subjects have been admitted to Stanford University and have done satisfactory work.

2. Selection among those seeking admission is made on a competitive basis, the factors considered being: (a) *total scholarship rating* (the high-school marks are weighted, three points being given for an A, two points for a B, one point for a C, and no points for lower marks; at least twelve of the units submitted should have been accomplished with a mark of B or better); (b) *score on a college aptitude test* (Thorndike) (a rating of less than 50 may cause rejection of application); (c) *judgment of five members of the Committee on Admissions* (based on the reading of all credentials, including character ratings by principal and teachers and evidence of leadership in pupil activities while in high school).

3. Any candidate who is a graduate of a senior high school—Grades X, XI, and XII—may be admitted to the competition on the basis of twelve units earned during these three years. If such a student completed a three-year junior high school course and carried the full required program during the ninth grade with an average mark of B, he is granted three blanket units to make up the fifteen required by the Association of American Universities. This is a further step toward the emancipation of the secondary school, since it releases the junior high school from doing prescribed types of college-entrance work.

The plan of admission here outlined, except the practice of requiring only English, has been in operation since October, 1924. Statistical research carried on by the director of personnel shows that there has been a distinct gain in the quality of the students. In 1921-22, 30.2 per cent of the students were placed on probation or disqualified on account of poor scholarship. In 1924-25, the first year of the new plan, this percentage dropped to 21.8. Another indication of the superior quality of the students selected under the new plan is found in the fact that the Freshmen who entered in October,

1921, under the old plan showed a shrinkage of 47 per cent when they returned as Sophomores in October, 1922, while the Freshmen entering in October, 1924, showed a shrinkage of only 21 per cent when they returned as Sophomores in October, 1925.

Of the three items in the Stanford scheme of admission, the total high-school scholarship rating, regardless of combination of subjects, has been found to be the most reliable index of college success; the score on the college aptitude test ranks second; and the judgment of the Committee on Admissions ranks third. When all three items are combined, however, the result is a much more reliable basis of selection than any that the university previously employed.

The Stanford method of admitting students on the basis of their total high-school record without insisting on a particular combination of subjects has made possible a comparison between the success of students who enter with a straight academic record and the success of those who offer three or more units of practical or vocational work. The classes entering in 1921 and 1922 were followed through their entire college course.¹ It was found that the average scholarship rating of the academic-type student was 1.11 and that the vocational-type student had an average scholarship rating of 1.09, or only two rating points lower. While the intelligence-test scores correlated more highly with college success in the case of the academic students than in the case of the vocational students, it was found that the high-school record was a better index of success for the vocational students than for the academic students. In other words, the assumed superiority of the academic pattern of high-school subjects over the vocational pattern did not appear. Certainly, three to five vocational units does not affect a student's preparation for college unfavorably, provided his total high-school record reveals a high grade of scholarship.

In spite of steadily rising standards of scholarship, which have made it increasingly difficult for inferior students to remain in the university, the percentage of failure and elimination has steadily decreased, and the average scores of entering students on the Thorndike test have increased more than ten points. The showing is best

¹ Lawrence Bolenbaugh and William Martin Proctor, "Relation of the Subjects Taken in High School to Success in College," *Journal of Educational Research*, XV (February, 1927), 87-92.

where the competition is keenest. Of the five hundred women students admitted in October, 1926, only one was dropped at the end of the autumn quarter on account of poor scholarship, and only eighteen were put on probation for deficient scholarship.

Is there not in the Stanford plan of admission a suggestion of a feasible plan for all colleges? If there ever was a time when the newer subjects were not entitled to be accepted on a level with the academic subjects as preparatory training for the type of student who can successfully accomplish college work, that time is now past. A student who has covered in his high-school course two units of English, one unit of social science, one unit of laboratory science, and one or two majors of three units each from the academic fields should certainly be permitted to select from three to five units of vocational work without endangering his chances of securing a college education. Especially is this true if his general ability and scholarship are such that he is in the top third of his graduating class.

There should be a new declaration of independence issued by the American high school. It should set forth the determination of the secondary school to serve first its own community. It should insist that the college adopt a method of selecting its students which will permit the reorganization of the high-school program of studies along lines that are scientifically sound and socially desirable. If one university can make its selection of high-school graduates on the basis of high scholarship without reference to specific subjects studied, mental capacity as revealed by an aptitude test, and social promise as shown by teachers' estimates and leadership in high-school activities, other universities can do the same. When college domination is ended, there will be a new era of intelligent co-operation between secondary schools and colleges, to the great advantage of both.

REACTIONS OF HIGH-SCHOOL PUPILS TO HIGH-SCHOOL SUBJECTS. II

JESSE E. ADAMS
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5. *What the pupils would leave out of the high-school curriculum if they had their choice.*—A relatively small number of pupils answered the question with regard to what they would leave out of the high-school curriculum. In the vocational schools 491 pupils answered the question. Of this number, 23.6 per cent would leave out plane geometry; 20.6 per cent, Latin; 12.4 per cent, first-year algebra; and 10.0 per cent, general history.

In the non-vocational schools 37.7 per cent of the 859 pupils answering the question would leave out Latin I; 16.0 per cent, Caesar; 14.2 per cent, geometry; and 7.6 per cent, algebra. In other words, the subjects that 75.5 per cent of the pupils would leave out of the curriculum are Latin and algebra. The subjects that the remaining 24.5 per cent of the pupils would leave out are scattered among twenty different subjects.

6. *The subjects the pupils would like to take but cannot get.*—Domestic science is most in demand by the girls among the 1,584 pupils in the vocational schools who indicated the subjects which they would like to take but which are not offered. French is second, followed by Spanish, typewriting, and bookkeeping. Among the boys, manual training is most wanted, with chemistry and Spanish next in demand, followed by typewriting and bookkeeping.

In the non-vocational schools the subjects the boys would like to take are manual training, typewriting, shorthand, chemistry, and bookkeeping, the subjects being listed in the order of their frequency of mention. The subjects the girls most want are domestic science, French, typewriting, shorthand, Spanish, music, and bookkeeping.

7. *Pupils' extreme reactions to certain subjects.*—One of the questions asked of each pupil was, "Of all the subjects you have taken in

the high school, which one do you like least?" Another question was, "Of all the subjects you have taken in the high school, which one do you like best?" While the tabulation of the answers to these questions shows very interesting data, it should be kept in mind that only the extreme reactions to any subject are given. From these answers we cannot determine the total like or dislike for any subject but only the total as it is expressed by the pupils who have extreme reactions to the subject. This makes it impossible to say with accuracy which subjects in the program of studies are most liked or disliked. Every subject was liked least by some pupils and best by others. There are doubtless all degrees of "like" between these extremes, but we have no record of them. It appears that, with only the extreme likes or dislikes expressed, almost any attempt to say what subjects are liked best or least presents questionable features. Taking the bare number of answers given for any subject is very unreliable, for the pupils who have taken the different subjects vary greatly in number. Taking the ratio of the number of pupils who like a subject best to the number who have taken it is a very doubtful procedure because of the great variations in numbers; moreover, by this method algebra is one of the three subjects liked both least and best. The fact that some subjects are elective and others are required does not permit a fair basis of comparison of subjects.

Regardless of the foregoing limitations, however, a type of comparison of subjects has been undertaken. Data on the subjects liked least and those liked best are presented in Table III. This table shows the number of pupils who checked each subject as the one they like least and the number of pupils who checked each subject as the one they like best. The last column of the table shows for each subject the ratio of the number of pupils liking it best to the number of pupils liking it least. The ratio simply shows the number of pupils liking a subject best for every one who likes it least. For example, the ratio for Latin I means that, when a group of pupils have taken Latin I, it will be found that for every pupil who likes it least there will be .52 of a pupil who likes it best. Manifestly, then, the larger the ratio, the greater the number of pupils who like the subject best for each one who likes it least, and therefore, according to our measure, the better the subject is liked.

Table IV shows the subjects arranged according to the ratios in the last column of Table III, the subject with the largest ratio—that is, the subject liked best according to this measure—appearing first. Thus, it is seen that home economics and agriculture are liked best and geography and Caesar least, algebra occupying fifth place.

8. *Pupils' extreme reactions as to the difficulty of high-school subjects.*—Table V, showing the subjects which are the easiest and those

TABLE III

PUPILS' EXTREME LIKES AND DISLIKES FOR HIGH-SCHOOL SUBJECTS

Subject	Number of Pupils Liking the Subject Least	Number of Pupils Liking the Subject Best	Ratio of the Number of Pupils Liking the Subject Best to the Number of Pupils Liking It Least
Latin I.	663	346	0.52
History	493	414	0.84
Algebra	470	1,011	2.15
English	412	964	2.34
Geometry	303	143	0.47
General science	274	300	1.09
Caesar	221	48	0.22
Civics	77	67	0.87
Agriculture	77	284	3.69
Geography	72	8	0.11
Arithmetic	57	120	2.11
Physics	55	39	0.71
Occupations	54	23	0.43
Biology	44	51	1.16
Physiology	39	27	0.69
French	20	49	2.45
Home economics	15	246	16.40

which are the hardest, is similar in form to Table III, which shows the subjects liked least and those liked best. The last column of Table V shows the number of pupils who find each subject the easiest for each pupil who finds it the hardest. Table VI shows the subjects arranged according to these ratios, the subject with the largest ratio appearing first. The larger the ratio, the easier the subject according to this measure. From Table VI it appears that home economics and agriculture are the easiest subjects and Caesar and physics the hardest, algebra occupying seventh place.

9. *Correlation between the rankings of the subjects that are the easiest and the rankings of the same subjects that are liked best.*—When the

TABLE IV

SUBJECTS RANKED ACCORDING TO THE RATIOS OF THE
NUMBER OF PUPILS LIKING THEM BEST TO THE
NUMBER OF PUPILS LIKING THEM LEAST

Subject	Rank
Home economics	1
Agriculture	2
French	3
English	4
Algebra	5
Arithmetic	6
Biology	7
General science	8
Civics	9
History	10
Physics	11
Physiology	12
Latin I	13
Geometry	14
Occupations	15
Caesar	16
Geography	17

TABLE V

PUPILS' EXTREME REACTIONS AS TO DIFFICULTY OF HIGH-SCHOOL SUBJECTS

Subject	Number of Pupils Considering the Subject the Hardest	Number of Pupils Considering the Subject the Easiest	Ratio of the Number of Pupils Considering the Subject the Easiest to the Number of Pupils Considering the Subject the Hardest
Algebra	725	922	1.27
History	698	419	0.60
English	685	1,115	1.63
Latin I	566	171	0.30
Geometry	549	122	0.22
Caesar	259	17	0.07
General science	230	275	1.20
Physics	177	30	0.17
Arithmetic	126	173	1.37
French	71	75	1.06
Civics	71	200	2.82
Biology	62	69	1.11
Geography	54	42	0.78
Physiology	51	43	0.84
Agriculture	48	333	6.94
Occupations	30	55	1.83
Home economics	6	236	39.33

rankings of the subjects that are liked best are correlated by the Spearman rank method with the rankings of the same subjects that are considered the easiest, a positive correlation of .68 is found. In so far, then, as the ratios really tend to measure, it would appear that pupils have a rather strong tendency to like best those subjects which they find easiest.

10. *Why pupils like certain subjects least.*—Table VII shows why pupils think they dislike certain subjects. The three following rea-

TABLE VI
SUBJECTS RANKED ACCORDING TO THE RATIOS OF THE
NUMBER OF PUPILS CONSIDERING THEM THE EASIEST
TO THE NUMBER OF PUPILS CONSIDERING THEM THE
HARDEST

Subject	Rank
Home economics	1
Agriculture	2
Civics	3
Occupations	4
English	5
Arithmetic	6
Algebra	7
General science	8
Biology	9
French	10
Physiology	11
Geography	12
History	13
Latin I	14
Geometry	15
Physics	16
Caesar	17

sons for disliking a subject were given in the questionnaire with the suggestion that the pupil check the appropriate one. "(a) The subject was too difficult. (b) I did not like the teacher. (c) I did not consider it would be of any value to me." A blank space was left for any additional reasons. From the table it can readily be seen that most pupils dislike a subject because they consider it too difficult for them. This reason accounts for 64.7 per cent of the "dislikes" in algebra in the non-vocational schools. It is the cause of 50.0 per cent of the "dislikes" in arithmetic; 54.0 per cent in Caesar; 62.9 per cent in English;

60.0 per cent in general science; 58.9 per cent in history; 51.3 per cent in geometry; 63.7 per cent in physics; 50.0 per cent in civics; 66.7 per cent in occupations; and 57.2 per cent in all subjects combined. In the vocational schools the corresponding percentages are still higher. In fact, in almost every subject "subject too difficult" shows a higher percentage in the vocational schools than in the non-vocational schools, the only exceptions being physics, civics, and occupations.

TABLE VII

PERCENTAGE OF PUPILS DISLIKING EACH SUBJECT FOR EACH REASON SUGGESTED

SUBJECT	NON-VOCATIONAL SCHOOLS			VOCATIONAL SCHOOLS		
	Subject Too Difficult	Did Not Like Teacher	Considered Subject Matter of No Value	Subject Too Difficult	Did Not Like Teacher	Considered Subject Matter of No Value
Algebra.....	64.7	8.8	26.5	70.9	5.0	24.1
Arithmetic.....	50.0	3.9	46.1	71.9	9.4	18.7
Caesar.....	54.0	5.2	40.8	66.7	4.8	28.5
English.....	62.9	12.5	24.6	78.5	7.9	13.6
General science.....	60.0	5.2	34.8	62.7	10.8	26.5
History.....	58.9	9.4	31.7	71.9	3.9	24.2
Latin I.....	55.0	8.4	36.6	61.7	4.2	34.1
Geometry.....	51.3	7.6	41.1	52.1	4.6	43.3
Physics.....	63.7	3.0	33.3	61.9	0.0	38.1
Physiology.....	55.5	11.1	33.4	85.8	7.1	7.1
Biology.....	26.9	7.7	65.4	70.0	0.0	30.0
Civics.....	50.0	7.4	42.6	43.6	5.1	51.3
Occupations.....	66.7	20.0	13.3	25.0	0.0	75.0
Agriculture.....				29.6	8.4	62.0
Total.....	57.2	8.7	34.1	65.4	5.5	29.1
Total number of cases.	1,185	179	707	1,028	87	458

"Did not like teacher" accounts for 8.6 per cent of the "dislikes" in all subjects combined in the non-vocational schools and for 5.5 per cent in the vocational schools. This is further evidence that teachers in the vocational schools seem to be "liked" better than those in the non-vocational schools.

The second most important reason for disliking a subject is the failure to see that it will be of any value in life. This accounts for 34.2 per cent of the "dislikes" in all subjects in the non-vocational schools and for 29.1 per cent in the vocational schools. It is interesting to note that pupils in the vocational schools seem to feel a greater

need for arithmetic, algebra, Caesar, English, history, and the sciences than do pupils in the non-vocational schools; that is, in every one of these subjects the percentage of "dislikes" due to failure to feel the worth of the subject matter is smaller for the pupils in the vocational schools than for the pupils in the non-vocational schools. It is also interesting to note that in the vocational schools the subjects most disliked because pupils do not feel they are of any worth are occupations and agriculture. This may be due to the number of girls taking these subjects. The number of cases of "dislike" in these subjects is small, and this fact might make the percentages unreliable.

11. *Why pupils like certain subjects best.*—Table VIII shows the reasons given by the pupils for liking certain subjects. In the questionnaire three reasons for liking a subject were suggested, and each pupil was asked to check the appropriate one. A blank was left for any additional reasons. The reasons suggested were as follows: "(1) Because I thought it would help me in the future. (2) Because it was easy. (3) Because I liked the teacher." The table shows that the chief reason for liking a subject is the feeling that it will be of value in life. In 55.9 per cent of all the cases in the non-vocational schools and in 50.9 per cent of all the cases in the vocational schools this was the reason given for liking a subject. In the non-vocational schools it is the reason most frequently given in the case of every subject except biology, and in the vocational schools it is the reason most frequently given in the case of every subject. In the non-vocational schools 62.4 per cent of those who like algebra best gave as their reason that they believed it would be of value to them in the future. The same reason was given by 62.2 per cent of the pupils liking English best, by 60.0 per cent of the pupils liking history best, and by 53.5 per cent of the pupils liking Caesar best. On the average, the percentages are a little lower for the vocational schools.

"Subject was easy" was given as the reason for liking a subject three times as frequently in the vocational schools as in the non-vocational schools. Twenty-seven and six-tenths per cent of the pupils in the vocational schools who like algebra best do so because they found it easy. Percentages in the vocational schools are 25.0 for arithmetic, 26.7 for Caesar, 26.5 for geometry, 31.8 for history, and

25.5 for all subjects combined. In the non-vocational schools we find that, of those who like algebra best, 9.6 per cent like it because it is easy. This is approximately one-third of the corresponding percentage in the case of the vocational schools. When other subjects are compared in the two groups of schools, approximately the same ratios hold.

"Liked the teacher" was the reason given for liking certain subjects in more than one-third of the cases in the non-vocational

TABLE VIII
PERCENTAGE OF PUPILS LIKING EACH SUBJECT FOR EACH REASON SUGGESTED

SUBJECT	NON-VOCATIONAL SCHOOLS			VOCATIONAL SCHOOLS		
	Thought It Would Be of Value in Life	Subject Was Easy	Liked the Teacher	Thought It Would Be of Value in Life	Subject Was Easy	Liked the Teacher
Algebra.....	62.4	9.6	28.0	48.6	27.6	23.8
Arithmetic.....	57.6	3.0	39.4	55.0	25.0	20.0
Biology.....	37.5	8.3	54.2	55.0	15.0	30.0
Civics.....	52.6	7.9	39.5	50.0	15.4	34.6
English.....	62.2	13.7	24.1	61.4	19.6	19.0
Caesar.....	53.5	3.8	42.7	40.3	26.7	33.0
Geometry.....	50.7	7.7	41.6	46.2	26.5	27.3
History.....	60.0	9.5	30.5	45.1	31.8	23.1
Latin I.....	52.3	8.9	38.8	48.8	25.3	25.9
General science.....	53.8	6.2	40.0	47.9	27.9	24.2
Home economics.....				44.0	26.5	29.5
Total.....	55.9	8.5	35.6	51.0	25.5	23.5
Total number of cases.	1,121	171	714	1,617	809	745

schools and in almost one-fourth of the cases in the vocational schools. In the non-vocational schools this was the reason given by 42.7 per cent of the pupils liking Caesar best, by 41.6 per cent of the pupils liking geometry best, and by 54.2 per cent of the pupils liking biology best. In every subject liking the teacher as the reason for liking a subject is less important in the vocational schools than in the non-vocational schools. In short, the two most frequent reasons given in the non-vocational schools for liking a subject are "because I thought it would help me in the future" and "because I liked the teacher." In the vocational schools the two most frequent reasons given are "because I thought it would help me in the future" and "because it was easy."

12. *The values of, and the needs for, such data.*—The value to the curriculum-maker of such data as is presented in this study cannot be better shown perhaps than by giving three quotations from Part II of the Twenty-Sixth Yearbook of the National Society for the Study of Education.

In establishing the relative importance of proposed materials of instruction . . . the curriculum-maker is compelled to decide what use he shall make of the present needs, interests, and activities of children on the one hand, and also of the results accruing from the scientific study of society on the other.¹

To validate any experience for any particular time, both child interest and social value in the control of behavior should be used as tests.²

Learning takes place most effectively and economically in the matrix of a situation which grips the learner, which is to him vital—worth while.³

SUMMARY AND CONCLUSIONS

1. Mathematics and Latin are responsible for 63 per cent of all the failures in the vocational schools and 60 per cent of all the failures in the non-vocational schools.

2. English seems to be about three times as difficult for boys as for girls if difficulty can be measured by the number of failures.

3. In both groups of schools nearly two-thirds of all the failures occur in the first year of the high school.

4. Great variations were found in the percentages of failures in the same subject in different schools. Great variations were also found in the total failures in different schools.

5. In both groups of schools the chief reason for failure as given by the pupils is the failure to do back work. This is given as the cause of 43 per cent of all the failures in the vocational schools and 37 per cent of all the failures in the non-vocational schools.

6. Subject matter that is too difficult accounts for 31.5 per cent of all the failures in the vocational schools and 28.7 per cent of all the failures in the non-vocational schools; failure to see any value in the subject is given as the cause of 11.1 per cent of all the failures in the vocational schools and 18.8 per cent of all the failures in the non-vocational schools. "Did not like teacher" is given as the cause

¹ *The Foundations of Curriculum-Making*, p. 13. The Twenty-Sixth Yearbook of the National Society for the Study of Education, Part II. Bloomington, Illinois: Public School Publishing Co., 1926.

² *Ibid.*

³ *Ibid.*, p. 18.

of 14.4 per cent of all the failures in the vocational schools and 15.5 per cent of all the failures in the non-vocational schools.

7. If the per capita cost in the high schools included in this study were \$80 a year and each pupil were carrying a load of four subjects a year, the money cost of these failures would be approximately \$38,500.

8. In the vocational schools only a few failures are recorded in some of the regular vocational subjects. If the failures in animal husbandry, biology, domestic science, occupations, and agriculture are combined, less than 3 per cent of all the failures are accounted for. Forty-three and five-tenths per cent of all the pupils in these high schools are taking the agricultural curriculum.

9. Approximately 75 per cent of all the pupils in both groups of schools expect to enter either a regular college or a business college immediately after graduation.

10. Immediately after graduation 2.6 per cent of the pupils in the vocational schools and 1.4 per cent of the pupils in the non-vocational schools expect to go on the farm. The fathers of 64 per cent of the pupils in the vocational schools and of 56 per cent of the pupils in the non-vocational schools are farmers.

11. Ultimately 31.4 per cent of the pupils in the vocational schools and 23.5 per cent of the pupils in the non-vocational schools expect to teach. In the vocational schools the number of girls who are planning to teach is 852 per cent of the number of boys who are planning to teach; in the non-vocational schools the corresponding percentage is 1,019. In short, the teaching profession in Kentucky seems destined to continue to be dominated by women. Ultimately 6.4 per cent of the pupils in the vocational schools and 2.5 per cent of the pupils in the non-vocational schools expect to farm. While these percentages seem small, it should be noted that the percentage of pupils in the vocational schools who expect to farm is more than two and one-half times the percentage of pupils in the non-vocational schools who expect to farm. In both groups of schools from 10 to 15 per cent of the pupils are expecting to do stenographic work or bookkeeping.

12. In both groups of schools the pupils are in favor of leaving geometry, algebra, and Latin out of the high-school curriculum.

13. The subjects which the girls most want but cannot get are domestic science, French, Spanish, typewriting, and bookkeeping. The subjects the boys most want but cannot get are manual training, typewriting, shorthand, chemistry, and bookkeeping.

14. Based on the ratio of the number of pupils who like a subject best to the number of pupils who like it least, home economics and agriculture are easily the favorite studies, Latin I, geometry, and Caesar being among the least liked. In 61 per cent of the cases of dislike, subject matter that is too difficult is given as the cause. Failure to see much value in the subject is another prominent reason. Not liking the teacher seems to be a minor factor in not liking a subject.

15. Some of the subjects liked best by many of the pupils are liked least by a large group of pupils. The most important reason given for liking certain subjects best is a feeling of the worth of the subject matter. In the non-vocational schools "liked the teacher" seems an important factor also. In many cases the fact that a subject was easy was given as the reason for liking it best.

16. Agriculture and home economics are the easiest subjects, while Latin I, geometry, physics, and Caesar are the most difficult. The correlation between the ranking of the subjects liked best and the ranking of the subjects that are the easiest is .68 by the Spearman rank method.

17. This study as well as others of similar kind seems to indicate that, when we learn to use the interests and aspirations of high-school pupils, much may be saved in financial outlay. The saving in lost interests, crushed hopes, and blasted ambitions seems destined to exceed the most liberal expectations.

SCIENCE DEPARTMENT MEETINGS

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In this article, intended to help the new head of a science department, the writer has outlined the salient points of the department meetings for two semesters. Following each monthly outline is a suggested topic for the next meeting and a brief bibliography of that topic.

So far as the utility of a two-semester outline is concerned, the writer feels that a bird's-eye view of the teachers' needs, of the pupils' needs, of the machinery of organization, and of the co-ordination of labor will be helpful to a chairman.

I. September meeting.

1. Appointment of a secretary for the year.

- a) Duties: to write up the minutes and to furnish each teacher and the chairman with a typewritten copy.

2. Discussion of routine matters.

- a) Discuss all recommendations of the principal or his representatives, time of department meetings, distribution of textbooks, care of rooms, supplies, etc. These routine matters should be mimeographed and distributed to the teachers some time before the meeting is called.

3. Topics for discussion at future meetings. The chairman must use a high degree of discretion if topics are to be assigned. He must know his teachers and their strong and weak points. From the following topics may be selected those to be discussed at future meetings. One good reference is added in each case.

- a) Objectives of physics, chemistry, etc. Elliot Rowland Downing, *Teaching Science in the Schools*, chap. v. Chicago: University of Chicago Press, 1925.

- b) Laboratory method versus demonstration method. Francis D. Curtis, *A Digest of Investigations in the Teaching of Science in the Elementary and Secondary Schools*, pp. 42, 46, 48, 61, 72, 85, 90, 100. Philadelphia: P. Blakiston's Son & Co., 1926.
- c) Values of notebook work, both in the recitation section and in the laboratory section. Herbert Brownell and Frank B. Wade, *The Teaching of Science and the Science Teacher*, chap. iii. New York: Century Co., 1925.
- d) Reorganization of science-teaching in the secondary schools. *Reorganization of Science in Secondary Schools*. Bureau of Education Bulletin No. 26, 1920.
- e) Science-teaching in foreign countries. *Natural Science Teaching in Great Britain*. Bureau of Education Bulletin No. 63, 1919.
- f) A new demonstration to be added to our stock of demonstration experiments. *Science Classroom*. Edited by Morris Meister and published by the Popular Science Publishing Company.
- g) Review of current literature, such as *The Electron*, by Robert Andrews Millikan. Chicago: University of Chicago Press, 1924 [revised].
- h) Project method. William Heard Kilpatrick, *The Project Method: The Use of the Purposeful Act in the Educative Process*. Teachers College Bulletin, Tenth Series, No. 3 (October 12, 1918).
- i) Construction of tests and grading. Rogers D. Rusk, *How To Teach Physics*, chap. xiv. Philadelphia: J. B. Lippincott Co., 1923.
- j) How to study. F. M. McMurry, *How To Study and Teaching How To Study*. Boston: Houghton Mifflin Co., 1909.
- k) Values derived from a study of the vocabulary of science textbooks. S. R. Powers, "A Vocabulary of Scientific Terms for High School Students," *Teachers College Record*, XXVIII (November, 1926), 220-45.

- l) Psychology of science subjects. Charles Hubbard Judd, *Psychology of High-School Subjects*, chap. xiv. Boston: Ginn & Co., 1915.
 - m) A science topic, such as the theory of radio. *The Principles Underlying Radio Communication*. Radio Communication Pamphlet No. 40. Washington: Government Printing Office, 1922.
 - n) Teacher-rating. William H. Burton, *Supervision and the Improvement of Teaching*, chap. xv. New York: D. Appleton & Co., 1922.
 - o) Psychology of problem-solving. Edward L. Thorndike and Others, *The Psychology of Algebra*, chap. v. New York: Macmillan Co., 1923.
 - p) Why do pupils fail? Don C. Rogers, "A Study of Pupil Failures in Chicago," *Elementary School Journal*, XXVI (December, 1925), 273-77.
 - q) Which textbook am I to use? Herbert Brownell and Frank B. Wade, *The Teaching of Science and the Science Teacher*, chap. v. New York: Century Co., 1925.
 - r) The use of supplementary material. S. R. Powers, "Outlines of Supplementary Material for General Science Students," *Science Classroom*, VI (September, 1926), 1.
 - s) New-type tests. Harl R. Douglass, *Modern Methods in High School Teaching*, chaps. xiii-xiv. Boston: Houghton Mifflin Co., 1926.
 - t) The science library. Hanor A. Webb, "The High-School Science Library," *Peabody Journal of Education*, III (September, 1925), 85-119.
4. A discussion by the chairman of the subject, "How To Study." Such a discussion is advisable because this is the first real problem which pupils meet in beginning a new subject.
- a) Meaning of study.
 - (1) Attentive application in order to get at the nucleus of a paragraph for such purposes as acquiring knowledge and learning to understand directions.

- (2) McMurry suggests that all study must be purposeful.
- b) Technique of study.
 - (1) Satisfactory physical conditions, such as quiet, no disturbing or distracting influences.
 - (2) Satisfactory health of pupils.
 - (3) Regularity of study period.
- c) Assignments.
 - (1) Pupils must know what to study.
 - (2) Assignment must be outgrowth of present lesson and should be made during the lesson when the pupils are ready for it.
 - (3) Assignment must be linked with preceding lesson and with present lesson.
 - (4) Study period should be devoted to helping pupils.
 - (a) It is advisable to spend at least one period—possibly the first or second—in actually going through the process with the pupils, using textbooks and other supplementary material.
- d) Values of knowing how to study.
 - (1) In the solution of a problem.
 - (2) Habit formation.
 - (3) As an aid to advancing one's self in one's chosen vocation.
- e) References.
 - (1) *The Modern High School*, chaps. x-xi. Edited by Charles Hughes Johnston. New York: Charles Scribner's Sons, 1914.
 - (2) F. M. McMurry, *How To Study and Teaching How To Study*. Boston: Houghton Mifflin Co., 1909.
 - (3) Harry A. Cunningham, "Teaching 'How To Study,'" *School Review*, XXXIII (May, 1925), 355-62.
 - (4) Percival M. Symonds, "Study Habits of High School Pupils," *Teachers College Record*, XXVII (April, 1926), 713-24.

- (5) Leo J. Brueckner, "A Survey of the Use Made of the Supervised-Study Period," *School Review*, XXXIII (May, 1925), 333-45.

5. Preparation for the October meeting.

- a) The chairman might assign to the laboratory assistant of the department the problem of a new demonstration.
- b) Since a presentation of the kind suggested under (a) may lead to a discussion of the laboratory method versus the demonstration method, it might be worth while to make this a second topic.
- c) A week before the October meeting and a week before each meeting thereafter, each teacher should be given a typewritten copy of the matters which will be discussed at the coming meeting.
- d) References for demonstrations. *Science Classroom*. Edited by Morris Meister and published by the Popular Science Publishing Company.
- e) References for the laboratory method versus the demonstration method.
 - (1) E. W. Kiebler and Clifford Woody, "The Individual Laboratory versus the Demonstration Method of Teaching Physics," *Journal of Educational Research*, VII (January, 1923), 50-58.
 - (2) J. L. Coopridger, "Oral versus Written Instruction and Demonstration versus Individual Work in High School Science," *School Science and Mathematics*, XXII (December, 1922), 838-44.
 - (3) J. L. Coopridger, "Laboratory Methods in High School Science," *School Science and Mathematics*, XXIII (June, 1923), 526-30.
 - (4) Elliot R. Downing, "A Comparison of the Lecture-Demonstration and the Laboratory Methods of Instruction in Science," *School Review*, XXXIII (November, 1925), 688-97.

II. October meeting.

1. Routine matters should be discussed only if they are of great importance; otherwise, a mimeographed copy is

sufficient. From here on, no mention of routine matters will be made.

2. The demonstration by the laboratory assistant as planned during the September meeting. During the past year, the laboratory assistant in the Franklin K. Lane High School, Brooklyn, set up an experiment on "The Migration of Ions," described by Kendall. James Kendall, *Smith's College Chemistry*, chap. xvii. New York: Century Co., 1923.
3. A discussion of the topic, "Demonstration versus Laboratory Work." The reaching of definite conclusions as to when one might be used in preference to the other should be encouraged.
 - a) The following is quoted from E. W. Kiebler and Clifford Woody, "The Individual Laboratory versus the Demonstration Method of Teaching Physics," *Journal of Educational Research*, VII (January, 1923), 58. "On the basis of the foregoing data, the following observations seem justified: (a) The results secured through the use of the demonstration method were as good, if not superior, in all three types of tests given—the tests for immediate knowledge, for permanent knowledge, and for knowledge of how to apply principles and technique in solving a new problem. While the advantage in favor of the demonstration method was small, it was very significant. (b) The individual method tended to be superior in those experiments that are especially difficult to perform or in which great care must be exercised to see the exact procedure. Such facts suggest that the most effective method depends upon the nature of the experiments themselves and suggest the need for scientifically classifying them. (c) When the demonstration method gives equal or superior results, it is to be preferred to the individual laboratory method because it saves about one-half of the time usually devoted to performing the experiments and permits the instructor to use the time thus saved in relating the facts and principles to allied phenomena. Furthermore,

the enthusiasm of the class working together is most valuable. (d) New problems involving principles and technique already learned arouse much interest and enthusiasm and offer opportunity for rich returns in teaching. (e) The results of the experiment suggest that, in the smaller high schools at least, better teaching would result and much money would be saved if the laboratories could be arranged and equipped so as to facilitate the demonstration of many of the experiments instead of trying to provide apparatus for the individual performance of all of them."

4. Preparation for the November meeting.

a) Since the time for the mid-term examinations is approaching, it might be wise to take up the problem of the examination, its function and its construction. Furthermore, the construction of examination questions becomes the special problem of the teacher, since this work is usually delegated to the teacher at least four times a year, namely, in the middle and at the end of each term.

b) Such questions as the following might command attention:

(1) Why give examinations?

(2) What reasons can you offer for the failure of some tests?

(3) What factors should be taken into consideration in the construction of a good test?

c) References.

(1) William H. Burton, *Supervision and the Improvement of Teaching*, chap. xiii. New York: D. Appleton & Co., 1922.

(2) Rogers D. Rusk, *How To Teach Physics*, chap. xiv. Philadelphia: J. B. Lippincott Co., 1923.

III. November meeting.

1. Topic: "Construction of Examination Questions."

a) Why give examinations?

(1) To determine what the pupils remember.

- (2) To find out how well the subject matter is understood.
 - (3) To determine whether the pupils can apply the knowledge gained.
 - (4) To determine one's own weaknesses.
 - b) What reasons can you give for the failure of some tests?
 - (1) Failure to state questions clearly.
 - (2) Test made up of so-called "thought-provoking" questions which are too difficult and which are based on information not in the possession of the pupil.
 - (3) Test too long and strain too great.
 - c) What percentage of the test should be allotted to different types of questions? Open for discussion.
 - (1) Thought-provoking questions—20 per cent.
 - (2) Memory questions—20 per cent.
 - (3) Questions to determine understanding—60 per cent.
 - d) William H. Burton says, "Roughly, tests are to determine how much a pupil remembers, how much he understands, or how well he can apply what he remembers and understands. In some subjects we test mainly for one of these factors, in others two, and in still others all three. . . . If examinations are to be teaching devices and are to further the learning process, obviously the questions must emphasize the application of the association in the way it will be most commonly used in life. There is little excuse for peculiarly worded 'catch' questions; the language should be clear and exact. Some teachers believe that catch questions train pupils to think; so they will, but not in the way called for in real life. Questions should call for real application and intelligent discrimination by the pupil. Trick questions do not always secure this" (*Supervision and the Improvement of Teaching*, pp. 248-49).
2. Preparation for the December meeting (Topic: "Laboratory Work: Its Objectives and Procedures").

a) References.

- (1) William Heard Kilpatrick, *The Project Method: The Use of the Purposeful Act in the Educative Process*. Teachers College Bulletin, Tenth Series, No. 3 (October 12, 1918). Whole-hearted, purposeful activity is stressed by the author.
- (2) William Heard Kilpatrick, *Foundations of Method*. New York: Macmillan Co., 1925. Sounds the note of primary, associate, and concomitant learning.
- (3) *Reorganization of Science in Secondary Schools*, p. 20. Bureau of Education Bulletin No. 26, 1920. The laboratory is a work-place.
- (4) Herbert Brownell and Frank B. Wade, *The Teaching of Science and the Science Teacher*. New York: Century Co., 1925. The teaching cycle tends to show the co-ordination of the recitation and laboratory work.

IV. December meeting.

1. Topic: "Laboratory Work: Its Objectives and Procedures."

a) Objectives.

- (1) To promote the powers of observation not as an end but as a means of developing an understanding of one's environment.
- (2) To stimulate interest in things scientific by getting pupils to take pleasure in doing.
- (3) To make science live, to make it a pleasurable unfolding of things started.
- (4) To develop the concept of service.
- (5) To make clear the method of the investigator.
- (6) To satisfy stimulating thoughts provoked in the classroom.

Methods of procedure.

(1) Poor methods.

- (a) When a pupil meets a difficulty, no attempt is made to assist him in overcoming the difficulty.
- (b) No attempt is made to teach self-control. The very opposite seems to be true.

- (c) Very often pupils have no notion of what the laboratory experiment is about; they grope blindly in the dark without help from the teacher.
 - (d) The teacher makes no adequate preparation, which fact is evidenced by the inability of the teacher to give satisfactory answers to questions asked by the pupils with regard to subject matter and procedure.
 - (e) The teacher has an unsympathetic attitude, which is manifest in the fear shown by the pupils.
 - (f) No system of routine procedure to facilitate work is adopted.
- (2) Better methods.
- (a) During the lesson preceding the laboratory work, the pupils are introduced to the experiment by demonstrations, questioning, and review.
 - (b) If the experiment is not written up in the manual in the way the teacher would have it, corrections and changes are made but always with the function of the laboratory in mind.
 - (c) The pupils are working quietly, but their minds are set on certain definite objectives.
 - (d) When the better workers have finished, they are encouraged to assist pupils in need of help.
 - (e) The blackboard is used freely for summarization.
 - (f) The pupils know that the teacher is present as a friend to help only in overcoming obstacles. Whatever it may be, the problem for the day is a pupil problem. In this connection it might be very profitable to place the following investigation before the teachers at a group conference: J. L. Coopridger, "Laboratory Methods in High School Science," *School Science and Mathematics*, XXIII (June, 1923), 526-30.

2. Preparation for the January meeting.

a) For the purpose of encouraging the reading of the literature of science-teaching and of factual subject matter, the writer knows of no topic which is better able to bring the two together than the subject, "Scientific Method and Scientific Attitude."

b) References.

- (1) Irvine Masson, *Three Centuries of Chemistry*. New York: Macmillan Co., 1926.
- (2) Frederic William Westaway, *Scientific Method: Its Philosophy and Practice*. London: Blackie & Son, Ltd., 1919.
- (3) *Syllabuses in Physics and Chemistry*, pp. 60-65. Albany, New York: University of the State of New York Press, 1926.
- (4) Florian Cajori, *A History of Physics in Its Elementary Branches*. New York: Macmillan Co., 1899.

V. January meeting.

1. Topic: "Scientific Method and Scientific Attitude."

- a) *The Scientific Method: Its Philosophy and Practice* by F. W. Westaway is a book worth discussing not only because of its summary of the historical development of the scientific method from the time of Socrates down to the present day but mainly because of its application of this method to the teaching of secondary-school science. Very instructive features are the excerpts from the works of the great masters.
- b) While not treating specifically of this subject, *Three Centuries of Science* by Irvine Masson is of value because of the references to Francis Bacon, Robert Boyle, and Antoine Lavoisier. A portion of the book devoted to molecular concepts brings up to date the development of the history of the progress of science.
- c) For suggestions on the teaching of the scientific attitude, refer to page 60 of *Syllabuses in Physics and Chemistry* (Albany, New York: University of the State of New York Press, 1926). Under "The Scientific

Habits" ten points will be found which are worth perusing. The reference is included because of the wealth of fine material on other topics as well as on the one mentioned.

2. Preparation for the February meeting.

- a) The time is ripe for an appraisal of instruction. A splendid method of self-appraisal is the use of checking lists. The Johnson checking list may be obtained for ten cents. Franklin W. Johnson, *Checking List and Standards for Supervision of High School Instruction*. New York: Teachers College, Columbia University, 1924.

b) References.

- (1) William L. Connor, "A New Method of Rating Teachers," *Journal of Educational Research*, I (May, 1920), 338-58.
- (2) H. O. Rugg, "Self-Improvement of Teachers through Self-Rating: A New Scale for Rating Teachers' Efficiency," *Elementary School Journal*, XX (May, 1920), 670-84.
- (3) C. J. Anderson, A. S. Barr, and Maybell G. Bush, *Visiting the Teacher at Work*. New York: D. Appleton & Co., 1925.
- (4) William H. Burton, *Supervision and the Improvement of Teaching*, chap. xv. New York: D. Appleton & Co., 1922.
- (5) Charles A. Wagner, *Common Sense in School Supervision*, chaps. vi-viii. Milwaukee, Wisconsin: Bruce Publishing Co., 1921.
- (6) Charles Hubbard Judd, *Psychology of High-School Subjects*, chap. xviii. Boston: Ginn & Co., 1915.

VI. February meeting.

1. Topic: "Checking Lists, with Special Reference to the Johnson and the Rugg Lists."

- a) By this time, each teacher will have been observed by the supervisor and conferences will have been held. As was mentioned before, the time is ripe for an appraisal

of instruction, and this cannot be done better than by taking a checking list and rating one's self. This method is of great value in determining weak points, in improving such weak points when recognized, and in relearning the elementary principles of classroom procedure.

2. Preparation for the March meeting.

a) Teachers of science should have a clear understanding of what constitutes the material to be used in their teaching. One way to accomplish this is to determine what in science is of most value to the layman. This can be done by making a study of printed material in periodicals and in newspapers, for, after all, high-school science is valuable to the extent to which it functions in the lives of the pupils. The next topic, then, is concerned with the question of science as it functions in the life of the layman.

b) References.

- (1) C. W. Finley and O. W. Caldwell, *Biology in the Public Press*. New York: Lincoln School of Teachers College, Columbia University, 1923.
- (2) M. E. Herriott, "Life Activities and the Physics Curriculum," *School Science and Mathematics*, XXIV (June, 1924), 631-34.
- (3) Francis D. Curtis, *A Digest of Investigations in the Teaching of Science in the Elementary and Secondary Schools*. Philadelphia: P. Blakiston's Son & Co., 1926.

VII. March meeting.

1. Topic: "Science: How Is It Functioning in the Life of the Layman?" The importance of a discussion of such a topic is self-evident. That science functions on all sides is obvious. How it functions requires investigation. One of the prime requisites of good instruction is the connecting up of the work at hand with definite concrete information. A knowledge of what the layman is thinking about is necessary for this.

- a) *Biology in the Public Press* by C. W. Finley and O. W. Caldwell reports an exhaustive investigation of biological topics found in the newspapers. All articles fall under eight main topics: health, animals, plants, food, organization of producers, evolution, nature, and fictitious. One-fourteenth of the 3,061 articles are concerned with the last four main topics. Newspaper articles on such topics as salmon, birds, skunks, and health talks make interesting subjects about which to weave lessons.
 - b) Very fine summaries of investigations appear in *A Digest of Investigations in the Teaching of Science in the Elementary and Secondary Schools* by Francis D. Curtis in connection with Studies 43C and 44C. In the first of these studies the scientific knowledge necessary for an intelligent reading of the public press is investigated; in the second study the scientific interests of adults and children are sought. A letter modeled after that used in Pollock's study, mentioned in Study 32C of the same book, was given to the pupils of general science in six high schools in Oregon, in three high schools in New York City, and in one high school in Oklahoma. The parents were asked to prepare lists of the scientific topics, theories, or questions which interested them most. The findings obtained by Curtis are very instructive.
2. Preparation for the April meeting.
 - a) Topic: "Development of the Modern Calendar." On first thought, this topic may seem inappropriate. It is inserted for the following reasons:
 - (1) To provide general information.
 - (2) To encourage pupils to report on any topic of general scientific interest.
 - (3) To help break down the lines of demarcation between the sciences and to show threads of common interests.

- (4) To knit together the various departments. The topic does, indeed, do this by showing the correlation between the work in history, physiography, and general science.

b) References.

- (1) Moses B. Cotsworth, "The Evolution of Calendars and How To Improve Them," *Bulletin of the Pan American Union*, LIV (June, 1922), 543-70.
- (2) Charles D. Stewart, "The Joints of Time," *Atlantic Monthly*, CXXXVII (January, 1926), 10-22.
- (3) Charles Nordmann, *Tyranny of Time*. New York: International Publishers, 1925.
- (4) "Calendar," *Encyclopaedia Britannica*.

VIII. April meeting.

1. Topic: "Development of the Modern Calendar."

- a) Early history. Reference should be made here to the calendars used by early people, such as the Hebrews and the early Greeks and Romans. This includes the operation of the lunar calendar in connection with the Metonic cycle.
- b) Egyptian calendar, a solar calendar built up on the basis of the seasons. The use of the pyramids for this purpose is well established.
 - (1) The need of such a calendar arose because of economic conditions.
 - (2) The variations in the rising points of the sun at different times of the year were so small that the lengths of noon-day shadows had to be resorted to. The noon-day shadows of a pyramid may be demonstrated by a model pyramid and a round frosted incandescent bulb. A large mirror set at an angle can be used to make the shadow movement visible to all. In a dark room this method is very effective.
- c) Julian calendar. Obtained from Egypt.
 - (1) Modification of the calendar of twelve months of thirty days each.
 - (2) Moon calendar preceded this solar calendar.

d) Gregorian calendar.

- (1) The Julian calendar was too long by a short period of time so that in 1582 there was a difference of about ten days, which necessitated changing October 5 to October 15. To allow for future discrepancies, every hundredth year except those divisible by 400 has no leap-year day.
- (2) England refused to adopt this calendar until 1751 because of its Catholic connections.

e) Suggested calendars.

- (1) Astronomical calendar of fifty-two weeks with January 0 as the extra day and June 0 as the extra leap-year day.
- (2) Equal-month calendar of thirteen months and fifty-two weeks.

2. Preparation for the May meeting.

- a) During the January meeting the scientific method was discussed. An outline of some research illustrative of this method will tend to supplement the January discussion. Furthermore, before the pupils complete their year of science, whatever the science may be, it will be well worth the effort to review such material as is related to research. For the May meeting, therefore, study of some special research should be taken up.

b) References.

- (1) John Tyndall, *New Fragments*, pp. 78-94. New York: D. Appleton & Co., 1892.
- (2) John Tyndall, *Heat: A Mode of Motion*. New York: D. Appleton & Co., 1883.
- (3) Ivor B. Hart, *Makers of Science*, pp. 139-73, 194-210. London: Oxford University Press, 1923.
- (4) Florian Cajori, *A History of Physics in Its Elementary Branches*. New York: Macmillan Co., 1899.
- (5) *Syllabuses in Physics and Chemistry*, pp. 65-68. Albany, New York: University of the State of New York Press, 1926.

IX. May meeting.

1. Topic: "An Outline of a Research: The Development of the Kinetic Theory of Heat."

a) The following is a synopsis of pages 65-68 of *Syllabuses in Physics and Chemistry*. Democritus and Epicurus regarded heat as consisting of small, round, smooth particles. The phlogiston theory was the accepted theory at the time when Francis Bacon, Hooke, Boyle, and Locke were advocating the idea of heat as motion. Lavoisier helped considerably to destroy the belief in the phlogiston theory by his explanation of combustion. Just before 1800 Count Rumford performed his famous cannon experiment showing heat to be a form of motion. Davy verified this fact by his experiments with ice. Joule showed the relation between work and heat. Popularization by Tyndall helped to spread the new theory.

b) Any lesson which has the inductive element in it could be used to illustrate the method.

2. Preparation for the June meeting.

a) Just before the end of the year a study of the new-type test might be in order, possibly as a nucleus for work to be carried out during the following summer or during the following year.

b) References.

- (1) A. R. Gilliland and R. H. Jordan, *Educational Measurements and the Classroom Teacher*. New York: Century Co., 1924.
- (2) Walter Scott Monroe, *Measuring the Results of Teaching*. Boston: Houghton Mifflin Co., 1918.
- (3) S. R. Powers, *Powers General Chemistry Test*. Yonkers-on-Hudson, New York: World Book Co., 1924.
- (4) *Hughes Physics Scales*. Bloomington, Illinois: Public School Publishing Co., 1922.
- (5) Giles M. Ruch and Herbert F. Popenoe, *Ruch-Popenoe General Science Test*. Yonkers-on-Hudson, New York: World Book Co., 1923.

- (6) Samuel Ralph Powers, *A Diagnostic Study of the Subject Matter of High School Chemistry*. Teachers College Contributions to Education, No. 149. New York: Teachers College, Columbia University, 1924.
- (7) Earl R. Glenn and Arch O. Heck, "Preliminary Studies of Achievement in Physics in Large City High Schools," in *Contributions to Education*, I, 319-41. Edited by J. Carleton Bell. Yonkers-on-Hudson, New York: World Book Co., 1924.
- (8) Henry Lester Gerry, *A Test of High-School Chemistry*. Cambridge, Massachusetts: Harvard University Press, 1923.
- (9) Stephen G. Rich, *Chemistry Tests*. Bloomington, Illinois: Public School Publishing Co., 1923.
- (10) Harold L. Camp, *Iowa Physics Tests*. Bloomington, Illinois: Public School Publishing Co., 1922.

X. June meeting.

1. Topic: "New-Type Tests."

- a) The Powers General Chemistry Test is published in two forms—Form A and Form B. Each form consists of two parts. Part I is a test of range of information about chemistry. Part II is a test on formulas, equations, and calculations. The items are arranged in the order of difficulty. The administration of the test is simple. The Manual of Directions is very illuminating. The following are some of the main items in the manual.
 - (1) Description and purpose of test.
 - (2) Construction and validation of test.
 - (3) Reliability of test.
 - (4) Directions for administering.
 - (5) Recording scores.
 - (6) Interpretation and utilization of results.
- b) The Hughes Physics Scales include two thought tests and two information tests, the questions being arranged in the order of difficulty. The author says that the scales are designed to measure the progress of pupils, to diagnose difficulties, and to rank pupils in achievement.

- c) For further information, it might be well to refer to Stephen G. Rich, "The Available Tests for Results of Teaching the Sciences," *School Science and Mathematics*, XXVI (November, 1926), 845-52.

It should not be necessary to note that a department library containing a few books on general education and on subjects connected with science problems would be helpful. Russell's list, which appears in a pamphlet published by the American Library Association for the general field, is suggested. (William F. Russell, *Reading with a Purpose: American Education*. Chicago: American Library Association, 1926.) It is as follows:

1. Edward L. Thorndike, *Education: A First Book*. New York: Macmillan Co., 1912.
2. Ellwood P. Cubberley, *Public Education in the United States*. Boston: Houghton Mifflin Co., 1919.
3. William Heard Kilpatrick, *Foundations of Method: Informal Talks on Teaching*. New York: Macmillan Co., 1925.
4. George D. Strayer and N. L. Engelhardt, *The Classroom Teacher at Work in American Schools*. New York: American Book Co., 1920.
5. Otis Caldwell and Stuart A. Courtis, *Then and Now in Education: 1845-1923*. Yonkers-on-Hudson, New York: World Book Co., 1923.
6. Henry Suzzallo, *Our Faith in Education*. Philadelphia: J. B. Lippincott Co., 1924.

For the supervisor, the following books may be added.

1. Franklin W. Johnson, *The Administration and Supervision of the High School*. Boston: Ginn & Co., 1925.
2. W. N. Andersen, *A Manual for School Officers*. New York: Century Co., 1925.
3. C. J. Anderson, A. S. Barr, and Maybell G. Bush, *Visiting the Teacher at Work*. New York: D. Appleton & Co., 1925.
4. Charles A. Wagner, *Common Sense in School Supervision*. Milwaukee, Wisconsin: Bruce Publishing Co., 1921.
5. William H. Burton, *Supervision and the Improvement of Teaching*. New York: D. Appleton & Co., 1922.
6. Ervin Eugene Lewis, *Personnel Problems of the Teaching*

Staff. New York: Century Co., 1925.

7. Martin J. Stormzand, *Progressive Methods of Teaching*. Boston: Houghton Mifflin Co., 1924.

8. Samuel Chester Parker, *Methods of Teaching in High Schools*. Boston: Ginn & Co., 1920 [revised].

9. Francis D. Curtis, *A Digest of Investigations in the Teaching of Science in the Elementary and Secondary Schools*. Philadelphia: P. Blakiston's Son & Co., 1926.

10. Ellwood P. Cubberley, *Public School Administration*. Boston: Houghton Mifflin Co., 1916.

The following books will commend themselves to science teachers because of the information which they contain bearing on the topics of the monthly meetings.

1. Herbert Brownell and Frank B. Wade, *The Teaching of Science and the Science Teacher*. New York: Century Co., 1925.

2. Elliot Rowland Downing, *Teaching Science in the Schools*. Chicago: University of Chicago Press, 1925.

3. Ivor B. Hart, *Makers of Science*. London: Oxford University Press, 1923.

4. George Ransom Twiss, *A Textbook in the Principles of Science Teaching*. New York: Macmillan Co., 1917.

5. Florian Cajori, *A History of Physics in Its Elementary Branches*. New York: Macmillan Co., 1899.

The following periodicals are suggested.

1. *School Science and Mathematics*, Mount Morris, Illinois.

2. *Scientific Monthly*, Grand Central Station, New York City.

3. *Journal of Chemical Education*, Easton, Pennsylvania.

4. *School Review*, Department of Education, University of Chicago, Chicago, Illinois.

5. *Science News-Letter*, B and 21st Streets, Washington, D.C.

6. *Science Classroom*, Popular Science Publishing Company, 250 Fourth Avenue, New York City.

7. *Scientific American*, 24 West 40th Street, New York City.

A DIRECTED-STUDY PLAN FOR TOWN HIGH SCHOOLS

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Many conditions often prevent a high school from being organized for supervised study under the conventional plan with the long divided period. The building facilities or the teaching load is often such that to telescope the day's classes into fewer but longer periods would be disadvantageous or impossible. Old buildings are often divided into numerous small rooms and thus present a physical obstacle to larger classes and a reduction in the number of periods a day. Again, there may be a desire not to impair the efficiency of teaching by increasing the class enrolment.

Such difficulties presented themselves when the supervised-study organization was considered in Newberg, Oregon. Many of the rooms would not comfortably accommodate more than twenty-five pupils. The physical features of the building and the enrolment made less than six periods a day an impossibility. A period sufficiently long to be used partly for recitation and partly for supervised study would have necessitated the elimination of one or two periods. In our situation this was impossible.

As a solution of our difficulty, we have evolved a plan which not only meets our particular problems but has, we believe, certain features which in some respects make it superior to the split-period scheme. The average teacher who finds it difficult to sustain interest and activity during the period seventy or eighty minutes in length has much less trouble with the period of fifty-five minutes, which we have adopted. The teacher who insists upon crowding out the study time with recitations meets an obstacle in our system. The recitation group and the equivalent study group are not, as a rule, entirely composed of identical pupils. A few of the brighter pupils of the recitation group are sent to the study hall during the study period; they are replaced by less bright pupils from the other class groups of the

teacher. Instead of being a place for all the pupils who have a free period, the study hall is a place only for those pupils who are capable of a high degree of independent study. Although each pupil has a definite schedule to follow, the plan is flexible enough so that any individual who needs more study guidance may have it by arranging his schedule to allow for additional time in a subject room. Four of the six periods each day are study periods for the pupil. One half of the teacher's time is spent in study direction; the other half, in group discussion.

The school day is divided into six periods of fifty-five minutes each. The program is so arranged that each teacher with six classes has three study periods and three recitation periods each day. Class groups have study one day and recitation the next. In order to desig-

TABLE I
A TYPICAL TWO-DAY SCHEDULE

Period	"A" Day	"B" Day
1.....	English study	English recitation
2.....	History study	English study
3.....	History recitation	History study
4.....	Mathematics study	Mathematics recitation
5.....	Science recitation	Science study
6.....	Mathematics study	Science study

nate the alternating days, we call one an "A" day and the other a "B" day. A class that recites on an "A" day is called an "A" class; one that recites on a "B" day is called a "B" class. At the beginning of the semester each pupil files with the office a schedule showing his routine for six periods on an "A" day and for six periods on a "B" day, or for twelve periods in all. A six-period day allows the pupil two periods a day for study in addition to the regular study and recitation periods. If he is not a bright pupil, he spends all of his periods in the study rooms in which he has subjects. A typical two-day schedule is shown in Table I. As will be noted, this pupil spends all of his time in subject rooms under the supervision of the teachers who give him instruction.

Such a program is flexible. At any time, with the permission of the teacher in his scheduled room, a pupil may spend additional periods in any other subject room. In fact, it is possible to spend

two or three consecutive periods in one room without conflict with a recitation period. A pupil is never permitted to go elsewhere during a recitation period.

It would seem that such an alternating program might cause much confusion. In our two years of experience with the plan, however, such has not been the case. Only during the first week of a new semester, before the pupils become adjusted to their programs, is there any difficulty; this is only slight and is to be expected under any system. Even the gap from Friday to Monday fails to disrupt the routine.

The advantages of the plan have already been referred to, but they will bear enlargement. As a study group does not generally include all the pupils who are in the corresponding recitation group, a check on the inclination of some teachers to follow the old plan of lesson-hearing is provided. As a rule, three or four of the brighter pupils of the class have been assigned to the study hall to make room for less capable pupils from the teacher's other classes. Again, perhaps, other pupils who have completed the work unit have been allowed to go to other rooms for study. Responsible pupils may be released from the study schedule entirely and may be allowed to apportion their own time among the study rooms. In this respect the plan has one of the advantages of the Dalton Plan—it encourages individual responsibility by giving deserving pupils ample opportunity for study freedom; yet a definite study schedule can be quickly reassigned if the pupil is unable to profit by this freedom.

The burden of the study hall with its heterogeneous group of undirected pupils is not great under this plan. In fact, the plan seems to be a very encouraging solution of the whole study-hall problem. A troublesome pupil is required to spend all of his periods in his subject rooms. Dull pupils, also, spend all their periods in their subject rooms. Only the more independent and responsible pupils are assigned to the study hall. As a result, discipline problems in the study hall have practically vanished, and the pupil-directed study room seems nearer realization.

Conflicts in classes are easily adjusted, for the plan really provides twelve periods instead of six in which to make an adjustment. A pupil who has an unavoidable conflict may attend two classes

scheduled for the same period but having alternate recitation days. His study is done in the classroom during other periods.

The foregoing plan merely represents a system which gives ample time to both pupil and teacher for individual contact. As in the case of all other systems, success is dependent not on the scheme itself but rather on the use that is made of it. In the last analysis, the success of individual instruction and directed study lies with the individual teacher. How intelligently the teacher views the problem, how skilfully the subject matter is organized and activity directed, and how patiently each individual problem is studied and adjusted to the subject matter are the vital factors.

We are fortunate in that our attempt to make each room appropriate to the subject taught has been very successful. Most of the rooms are equipped with tables and chairs; each has its bulletin board and the necessary reference books and supplementary materials. In most of the subjects the work is blocked into units of minimum requirements, and much success has attended our efforts to induce capable pupils to undertake extra work of an enriching nature for additional rewards. As the teacher comprehends the opportunities ahead, the recitation period ceases to be a conventional rehash of worn-out material. Instead, it becomes the opportunity for informal discussion, group direction, and an inventory of difficulties at hand and ahead.

The present plan is an outgrowth of a semester's experimentation with the Dalton Plan. We have found the present scheme a great improvement over the daily recitation, particularly in motivation and industry. For our purposes, we have found it much better than the Dalton Plan. The system allows ample freedom, but it provides an easy check on too much freedom. A few responsible pupils may be entirely released from schedules with the exception of the two recitation classes each day, and, as under the Dalton Plan, they may be allowed to choose their own study rooms, but they can very easily be put back on schedule if the responsibility overtaxes them. The plan has all the advantages of a definite routine, which is still a necessity for many pupils in the public school; yet it provides for individual differences.

MUSIC INSTRUCTION IN JUNIOR AND SENIOR HIGH SCHOOLS IN FORTY REPRESENTATIVE CITIES

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Music instruction of any importance is comparatively recent in high-school education in this country. Both vocal music and some instrumental music were a part of the curriculums of some of our early academies, eventually finding their way, as did many other secondary-school subjects, into the high school from this source. Although Boston is considered the cradle of public-school music in America, music instruction was not introduced into its high schools until 1872, thirty-five years after its first adoption. Definite mention is made of the establishment of music-teaching in the high schools of Chicago in 1848, of Cleveland in 1851, of Providence in 1856, of Cincinnati and St. Louis in 1858, and of Lowell in about 1870.¹ The work was usually chorus or assembly singing once or twice a week and was not considered of sufficient importance to warrant regular school credit. Its status remained practically the same until after 1906. Even at this late time there were but few schools offering music instruction of a more serious character than mere group singing. Cambridge offered a course in harmony, and, on the strength of its success, Boston and Worcester experimented with it as a high-school subject. Springfield, Massachusetts, had a course in harmony with credit and a course in music appreciation without credit, while Northampton offered in addition to harmony a course in voice culture with credit.² This was considered an exemplification of the country's best offering in high-school music education! Its development covers a period of scarcely two score years;

¹ Frances Dickey, "History of Public School Music," *Proceedings, Music Teachers' National Association*, 1913, pp. 196-202.

² Ralph Baldwin, "Music Credits in Secondary Schools," *Proceedings, Music Teachers' National Association*, 1906, p. 79.

yet today approximately 50 per cent of the total high-school enrolment of the country receives instruction in music. Some of it is meager, to be sure, but what an advance in thirteen years to find that, of 359 cities reporting to the United States Bureau of Education in 1919, 43 per cent required chorus; 90 per cent required assembly singing; 58 per cent had boys' glee clubs; 71 per cent had girls' glee clubs; 77 per cent had orchestras; and 35 per cent offered class work in harmony. A large majority of these cities actually allowed school credit for this work.¹ That was the condition seven years ago. What is the present status of high-school music instruction? What are the types of work offered? How much time is devoted to music-teaching? To what extent is credit allowed for such work? It is for the purpose of throwing some light on these questions that the accompanying figures are presented.

Table I is a compilation of data from forty cities having populations of 50,000 or more and representing twenty-one of the forty-eight states. The survey is representative only of the metropolitan centers. The extensiveness of the offering in music is shown by fifteen distinct types of work. Within these divisions many combinations and segregations for purposes of adaptation appear. The more common of these are listed in the table. Chorus work, which includes general class work in vocal music, is given in some form in all the forty cities. A large number of the cities offer the three separate types of work, that is, boys' chorus, girls' chorus, and chorus for boys and girls together. The tendency is to require it in the junior high school but to make it elective in the senior high school. The time allotment is fairly uniform throughout but shows an increase in the eleventh and twelfth grades, where nearly all the cities give credit for the work. The amount of time for chorus work for boys and girls separately ranges from 40 to 110 minutes a week from the seventh grade to the tenth grade, inclusive, while the amount of time for mixed chorus work ranges from 40 to 225 minutes a week throughout the junior and senior high schools. The maximum for boys and girls separately is increased to 200 minutes a week in the eleventh and twelfth grades.

¹ *Present Status of Music Instruction in Colleges and High Schools, 1919-20.* Bureau of Education Bulletin No. 9, 1921.

TABLE I
NUMBER OF CITIES (FORTY REPORTING) OFFERING VARIOUS TYPES OF ELECTIVE MUSIC WORK AT EACH GRADE LEVEL OF
THE SECONDARY SCHOOL, AVERAGE TIME ALLOTMENT IN MINUTES A WEEK, AND NUMBER OF CITIES GIVING CREDIT

TYPE OF WORK OFFERED	NUMBER OF CITIES OFFERING			AVERAGE NUMBER OF MINUTES A WEEK	NUMBER OF CITIES GIVING CREDIT	NUMBER OF CITIES OFFERING			AVERAGE NUMBER OF MINUTES A WEEK	NUMBER OF CITIES GIVING CREDIT
	Required	Elective	Total			Required	Elective	Total		
Seventh Grade										
Chorus—boys*	8	3	11	76	4	7	4	11	76	4
Chorus—girls*	7	3	10	79	4	7	4	11	76	4
Chorus—mixed	3	1	4	25	10	3	1	4	25	10
Appreciation	3	3	6	43	10	3	3	6	43	10
Appreciation and history	1	1	2	43	2	1	1	2	43	2
Appreciation and theory	2	2	4	235	2	2	2	4	235	2
Harmony	1	1	2	60	1	1	1	2	60	1
Theory	1	1	2	25	1	1	1	2	25	1
Orchestra	1	3	4	90	9	1	3	4	90	9
Glee club—boys	17	17	34	95	9	17	17	34	95	9
Glee club—girls	18	18	36	57	4	18	18	36	57	4
Glee club—mixed	8	8	16	90	3	8	8	16	90	3
Piano†	2	2	4	7	1	2	2	4	7	1
Violin†	7	7	14	7	1	7	7	14	7	1
Instrumental—class	5	5	10	5	1	5	5	10	5	1
Instrumental—ensemble	1	1	2	1	1	1	1	2	1	1
Club	1	1	2	1	1	1	1	2	1	1
Applied music||	4	4	8	4	1	4	4	8	4	1
Ninth Grade										
Chorus—boys*	7	8	15	74	9	5	8	13	76	10
Chorus—girls*	7	9	16	76	10	5	9	14	77	11
Chorus—mixed	21	16	37	69	19	10	16	26	69	20
Appreciation	1	6	7	43	6	1	6	7	43	6
Appreciation and history	2	5	7	230	3	1	5	6	245	5
Appreciation and harmony	2	3	5	240	3	1	4	5	278	5
Appreciation and theory	1	3	4	203	3	1	3	4	275	5
Harmony	1	8	9	108	8	1	10	11	140	11
History	1	1	2	120	6	1	3	4	155	3
Theory	1	1	2	120	6	1	3	4	155	3
Orchestra	39	39	78	125	28	37	37	74	125	31
Tenth Grade										
Chorus—boys*	5	8	13	76	10	5	8	13	76	10
Chorus—girls*	5	9	14	77	11	5	9	14	77	11
Chorus—mixed	10	16	26	69	19	10	16	26	69	20
Appreciation	1	6	7	43	6	1	6	7	43	6
Appreciation and history	1	5	6	230	3	1	4	5	245	5
Appreciation and harmony	1	3	4	240	3	1	3	4	278	5
Appreciation and theory	1	3	4	203	3	1	3	4	275	5
Harmony	1	8	9	108	8	1	10	11	140	11
History	1	1	2	120	6	1	3	4	155	3
Theory	1	1	2	120	6	1	3	4	155	3
Orchestra	39	39	78	125	28	37	37	74	125	31

* Includes general class work in vocal music.

† When given in the school.

‡ Other than glee clubs, chorus, etc.; includes piano, operetta, and appreciation clubs.

|| When school credit is allowed for private study outside of school.

TABLE I—Continued

TYPE OF WORK OFFERED	NUMBER OF CITIES OFFERING			AVERAGE NUMBER OF MINUTES A WEEK	NUMBER OF CITIES GIVING CREDIT	NUMBER OF CITIES OFFERING			AVERAGE NUMBER OF MINUTES A WEEK	NUMBER OF CITIES GIVING CREDIT
	Required	Elective				Required	Elective			
		Total	Total				Total	Total		
Ninth Grade—Continued										
Band.....	23	23	23	117	20	.....	26	26	114	22
Glee club—boys.....	25	25	25	78	14	.....	28	28	81	19
Glee club—girls.....	21	21	21	83	13	.....	20	20	81	18
Glee club—mixed.....	5	5	5	.....	11	.....	20	20	68	10
Piano*.....	5	5	5	.....	4	.....	5	5	.....	5
Violin*.....	5	5	5	.....	2	.....	5	5	.....	4
Voice*.....	2	2	2	.....	2	.....	2	2	.....	2
Instrumental—class.....	9	9	9	.....	1	.....	7	7	.....	1
Instrumental—ensemble.....	1	1	1	.....	1	.....	2	2	.....	2
Club†.....	.....	.....	.....	.....	.....	.....	3	3	.....	.....
Applied music‡.....	14	14	14	.....	14	.....	17	17	.....	.....
Tenth Grade—Continued										
Band.....	23	23	23	117	20	.....	26	26	114	22
Glee club—boys.....	25	25	25	78	14	.....	28	28	81	19
Glee club—girls.....	21	21	21	83	13	.....	20	20	81	18
Glee club—mixed.....	5	5	5	.....	11	.....	20	20	68	10
Piano*.....	5	5	5	.....	4	.....	5	5	.....	5
Violin*.....	5	5	5	.....	2	.....	5	5	.....	4
Voice*.....	2	2	2	.....	2	.....	2	2	.....	2
Instrumental—class.....	9	9	9	.....	1	.....	7	7	.....	1
Instrumental—ensemble.....	1	1	1	.....	1	.....	2	2	.....	2
Club†.....	.....	.....	.....	.....	.....	.....	3	3	.....	.....
Applied music‡.....	14	14	14	.....	14	.....	17	17	.....	.....
Eleventh Grade										
Band.....	23	23	23	117	20	.....	26	26	114	22
Glee club—boys.....	25	25	25	78	14	.....	28	28	81	19
Glee club—girls.....	21	21	21	83	13	.....	20	20	81	18
Glee club—mixed.....	5	5	5	.....	11	.....	20	20	68	10
Piano*.....	5	5	5	.....	4	.....	5	5	.....	5
Violin*.....	5	5	5	.....	2	.....	5	5	.....	4
Voice*.....	2	2	2	.....	2	.....	2	2	.....	2
Instrumental—class.....	9	9	9	.....	1	.....	7	7	.....	1
Instrumental—ensemble.....	1	1	1	.....	1	.....	2	2	.....	2
Club†.....	.....	.....	.....	.....	.....	.....	3	3	.....	.....
Applied music‡.....	14	14	14	.....	14	.....	17	17	.....	.....
Twelfth Grade										
Band.....	23	23	23	117	20	.....	26	26	114	22
Glee club—boys.....	25	25	25	78	14	.....	28	28	81	19
Glee club—girls.....	21	21	21	83	13	.....	20	20	81	18
Glee club—mixed.....	5	5	5	.....	11	.....	20	20	68	10
Piano*.....	5	5	5	.....	4	.....	5	5	.....	5
Violin*.....	5	5	5	.....	2	.....	5	5	.....	4
Voice*.....	2	2	2	.....	2	.....	2	2	.....	2
Instrumental—class.....	9	9	9	.....	1	.....	7	7	.....	1
Instrumental—ensemble.....	1	1	1	.....	1	.....	2	2	.....	2
Club†.....	.....	.....	.....	.....	.....	.....	3	3	.....	.....
Applied music‡.....	14	14	14	.....	14	.....	17	17	.....	.....

* When given in the school.

† Other than glee clubs, chorus, etc.; includes piano, operetta, and appreciation clubs.

‡ When school credit is allowed for private study outside of school.

§ Includes general class work in vocal music.

|| Separate course.

Appreciation as a separate course appears more commonly in the junior high school than in the senior high school. The tendency, however, is to make it a part of other courses, as shown by its combination with harmony, history, and theory. It was also mentioned many times as a part of chorus work. History, harmony, theory, and the combinations with appreciation apparently belong largely to the senior high school, where credit is given, usually comparable to that given for other school subjects with equal time requirements.

Orchestras are maintained in thirty-one of the forty cities in the first two years of the junior high school and in all but one city in the ninth grade. Thirty-seven of the forty cities report orchestras in the senior high school, and thirty-two of these thirty-seven cities allow credit for the work, devoting approximately two fifty-five-minute periods a week to it. The range in time is from 40 to 300 minutes a week for all grades. The few schools devoting an hour each day offer the full five-hour credit.

Bands are maintained in seventeen cities in the seventh and eighth grades and in twenty-three cities in the ninth grade, while twenty-six of the forty cities reporting have bands in the senior high school. The credit and the time allotment are similar to those in the case of the orchestras.

The tendency in the glee clubs is to segregate the boys and girls, the senior high school placing much more emphasis on this work than the junior high school. Seventy per cent of the forty cities have both boys' and girls' glee clubs, while nearly one-half of the cities also have mixed glee clubs. Approximately 70 per cent of these cities allow credit for this work in the senior high school, to which an average of eighty minutes a week is devoted. The time allotment ranges from 30 to 90 minutes a week for the seventh and eighth grades and from 40 to 200 minutes a week for the grades from the ninth to the twelfth.

School instruction in piano, voice, and violin is not common. Seven cities offer violin in the seventh and eighth grades and five in the grades from the ninth to the twelfth. Piano and voice belong primarily to the upper grades, according to practice. Classes in instrumental music, which include the violin, are offered by seven cities in the senior high school. Credit for this work is not usually

granted, perhaps because, in some cases at least, these classes are "feeders" for orchestras or bands, in which the members are required to take part and in which they receive credit.

Clubs other than glee clubs and chorus are not common. Those mentioned are banjo, ukulele, piano, operetta, and appreciation clubs.

Applied music is recognized in four cities in the seventh grade and in five cities in the eighth grade; fourteen cities allow credit in the ninth grade. It is recognized in the senior high school in nearly one-half of the cities reporting.

It is interesting to note the cleavage between the eighth and ninth grades which still exists, although most of the cities reporting have adopted the 6-3-3 plan of organization. The ninth grade as the most psychological dividing point in secondary education is not apparently fully recognized in the offering of music instruction.

From this description of practice, it is safe to conclude that music in the secondary school is rapidly gaining a status comparable to that of other subjects in the curriculum. It is no longer the mere group singing of a past generation or the extra-curriculum activity of a few years ago but a *regular* high-school subject, carrying full credit and receiving sufficient time and attention to make its teaching stand out as distinctly worth while. With a prestige attained, the future development of music instruction in the high school depends on professional improvement and achievement. Problems of curriculum adjustment and the direct improvement of teaching technique should claim increasing attention, the permanency of this improvement depending on the results of experimentation and research.

CERTAIN CRITERIA FOR CLASSIFYING PUPILS IN LITERATURE COURSES

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Recent studies in curriculum-making have placed great emphasis on those aims which can be stated in terms of habits and definite experiences. All departments have been forced to answer questions as to why they were in existence and whether they were presenting the best which might be taught. Along with other departments, the English department has found that answers to such demands have led to changed objectives and materials, so that from the modern curriculum many of the articles of faith have been banished. From progressive curriculums formal grammar has largely disappeared; close criticism of classics has been superseded by wide reading of a more popular sort; formal rhetoric has given place to the writing of letters and to such other composition as may be necessary in the daily program of the average citizen. This current attempt to meet the demands of educators and the public by presenting objectives justifiable on the basis of actual need in everyday life has renewed an old question which the introduction of English courses once raised, "Do not our pupils already know the English we are teaching?" The difficult element in the situation is that some of them do. We administer our new courses on the basis of old texts and types of work. A fair judgment would seem to be that, if our aims are to be in terms of social values, our classification—our arrangements for caring for pupils—must consider these social values as they are already developed in the child.

Curriculum-makers in this country are coming to see that a study of the vernacular is unique among high-school courses. The pupil is practicing the elements of this subject during most of his waking hours; he thinks, hears, speaks, and reads through the use of his native tongue. Because social contacts affect any phase of learning through language, the degrees of skill possessed by the members of

any English class will vary more than those possessed by the members of any other class. Even foreign-language study uses the vernacular as its medium except in advanced courses. Achievement in English, like achievement in other subjects, is conditioned by native ability and interest; but society, especially that part of society controlled by the home, undoubtedly affects skill in the vernacular more than it affects skill in any other subject. It is easily thinkable that fifty pupils representing a wide range in social classes and in ability may assemble in a classroom and may all be ignorant of the most elementary principles of algebra or not know a single word of Latin. It is not easily thinkable that among fifty such pupils there would not be several with speech habits already correctly formed and with well-grounded habits of reading for pleasure. There are undoubtedly abilities belonging to the field of English which all might lack, as, for example, a knowledge of certain rules of formal grammar, the rhyme scheme for a sonnet, or Chaucer's relation to English literature; but, in the making of the English curriculum, it would seem desirable so to group courses with relation to objectives, so to separate habit-forming and informational courses, as to make it possible for the child who has profited by home training to avoid identical training to any large degree in his school work.

English teachers almost universally recognize the difficulty presented by the situation outlined. Moreover, generally accepted objectives of the teaching of English place increasing emphasis on the acquisition of extra-classroom habits, prominent among which are correct usage and reading for pleasure. In spite of these facts, we are refusing to recognize the significance of the social background in classifying pupils, even while we recognize social activity in our objectives. This is probably due in part to inertia and in part to a conscious hesitancy to recognize in any objective way superior advantages possessed by any group of children. Because of the peculiarly intimate relation of language to the individual's personality, it is more difficult to recognize a pupil's excellent speech, or the time he spends in the library, than to recognize his ability to pass an advanced test in arithmetic.

In an effort more fairly to meet the needs of the pupils in literature courses in the Oread Training School, University of Kansas, a

careful evaluation of the abilities and habits of pupils was made in accordance with the following plan. The study included pupils enrolled in the tenth, eleventh, and twelfth grades. Since the freshman English course in this school is a unit tool course and since Freshmen are presumably in the process of readjustment to the high-school situation, ninth-grade pupils were not considered. There is probably only a local administrative justification for the exception.

The results of four sets of objective tests and the teacher's judgment based on definite suggestions were considered. The standards were arbitrarily chosen, their justification being left for the outcome of the teaching experiment. It was our purpose to initiate a new classification of pupils in literature by selecting a group of superior readers. Data for the whole department were available, and further groupings were discovered, as will be indicated. The criteria used were as follows:

1. *Intelligence quotient.*—Only those pupils were regarded as suitable for the superior group of readers for whom scores on intelligence tests indicated a mental age of eighteen years. This means a minimum I.Q. of 112 if we accept sixteen as the maximum divisor. The age of eighteen was chosen to accord with the standards of achievement. In the experimental class this mark seemed to be justified, since a group of such pupils tends to read widely and often intensively. We wished to avoid the danger of monopolizing the time and interest of a pupil who had not sufficient ability to carry his whole high-school load with comparative ease.

2. *Rate of reading and comprehension.*—The Thorndike-McCall reading test was used. Pupils who reached the twelfth-grade norms in rate and comprehension were accepted. A test based on both these elements seems desirable. Our experiments with both superior and markedly inferior pupils indicated a distinct relation between the ability to read rapidly and the ability to read for pleasure. The slower readers preferred two short books to one long book. Careful records to determine the relation of speed to reading habits need to be made. It is probable that, as teachers of literature, we underestimate the effect of rate on appreciation.

3. *Vocabulary.*—The pupils were given the Holley test in vocabulary. This test is easily given and shows the pupil's ability to recog-

nize meanings of words used in sentences. It is therefore suitable for the purpose of evaluating reading ability. In this case, as in the case of the other tests, the twelfth-grade norm was chosen as the standard for the superior group.

4. *Teacher's recommendation.*—While the teacher's opinion in the selection or classification of pupils is always subjective, certain definite suggestions tended to make judgment in this case more objective. Only those pupils were considered who had met the mechanics requirements of the objective tests named. Ability was therefore largely established. The teachers were asked to consider especially the readiness of the pupil in interpreting literature and his reading habits as evidenced by reading not offered for credit. Summer reading was given special consideration. The information was secured through informal conferences. In two cases it was apparent that the pupils, while capable of reading rapidly a wide variety of subjects, were too immature socially to make it seem advisable to include them in a class such as planned. These pupils were scheduled for special reading classes later in their high-school work. Since we wished to avoid undue emphasis on any superior ability or advantages possessed by any group, the pupils were told that classes were to be opened for those especially interested in certain lines or types of reading. Marks were not considered. In several cases the teacher found evident relief in the readjustment which the new classes made possible for pupils who had previously been problems. In schools using the plan of sectioning according to general intelligence such maladjustment would probably be less evident. Even among superior pupils, however, there are wide ranges in reading habits and in reading ability.

Of approximately sixty candidates, eight qualified for the special class. Of these, five were from homes where the opportunities for reading would probably be considered superior. Arrangements for a continuation of the plan were made. For this second class seven of a possible fifty-five were eligible.

In review, then, the criteria may be listed as follows: intelligence quotient; rate of reading; comprehension; vocabulary; ability to interpret literature, as judged by the teacher; and outside reading habits, as indicated by summer reading and other non-credit read-

ing. The pupils selected were superior readers. It would be logical to classify other pupils who have well-established reading habits but less ability and to give them material adapted to their interests and abilities. We need, indeed, to discover the point at which, for any given general ability, certain marked disabilities in the mechanics of reading make reading for pleasure an impossibility. For example, James, who is fifteen years old and has average mental development, has a reading ability corresponding to the fifth-grade norm. The bulk of material at this level does not appeal to James, since it is unsuited to his social development. He therefore says, "I don't like to read," although he thoroughly enjoys having someone read to him. Apparently, it is useless to attempt to train James to develop habits of leisure-time reading until James has had remedial work in the mechanics of reading. This extreme case is clear, but there is a wide range of pupil ability, and classification must wait for both experiment and psychological investigation. In using for the experiment only those with superior ability, we merely began the task of diagnosing the needs of the pupils.

A brief summary of the work accomplished by the group of pupils selected through the use of the criteria outlined is included here as suggesting the possibilities of such classification. A number of general suggestions were made, and the pupils were asked to choose any plan appealing to them as a class. They decided to begin by reading myths. After three weeks during which they read greedily of Greek, Latin, and Norse mythology; gypsy folk-lore; Irish fairy stories; the Arthurian and Charlemagne legends; and the stories of "Faust" and "Lohengrin" and generally discovered the realm of myth and legend, they refused, as they phrased it, "to come home." Greek mythology had suggested Greek plays, which they read from curiosity rather than for criticism. Interested in finding that literature was not necessarily English or American, they reveled in translations of French, Italian, and Spanish novels, plays, and short stories for the next eight weeks. The translated material suitable for such pupils is far more generous in quantity than the attention usually given to it in a high-school course would indicate. At the suggestion of the class, the term's work ended with four weeks of reading in English literature. Class work during this period included a discussion of

Sesame and Lilies. As the pupils had been enthusiastic about the course, we expected some questioning of Ruskin's doctrine of close reading. The opposite was the case. The wider reading, the glimpse into distant times and foreign lands, had impressed the pupils with the reaches of great literature. Their study of *Macbeth* emphasized this result. There was no need to spend teaching time in helping pupils to place themselves in a strange time and place. They adjusted themselves easily.

During the entire course no attempt was made to call for technical criticism nor to present literature history, although authors were placed in point of time and general background. Lists of books were supplied, and the pupils were allowed to choose. Consequently, no two read the same material. It was possible, however, to discuss general characteristics of peoples and writers, varied reading making these discussions interesting. Frequently pupils read material unfamiliar to the instructor. The freedom from uniformity in daily assignments was an important element in meeting the difficulty of securing books. While the pupils had access to the library of the University of Kansas and to the Lawrence city library, the majority of the books read were secured through other sources. The teachers brought material to the school from their private shelves, and the pupils themselves contributed. Members of the teaching staff outside the English department lent several volumes, and the school library furnished collections and most of the books on mythology. The writer has several times observed that even a rural community will afford many good books if duplicate copies are not required. A few books were purchased by the pupils, but the cost of these did not equal the usual expenditure for texts. At the beginning of a unit each pupil began a different book. During the first three or four days the class meetings were devoted to brief reports of progress, to a presentation by the teacher of a few facts concerning the country, period, or type of literature studied, and to class reading of parts of some play, novel, story, or legend typical of the subject of the unit. As soon as the pupils had read their initial material, the recitations consisted of comparisons, reports, and general discussions. As a result, books were exchanged and new ones suggested. At the conclusion of each unit a day or two was spent in general discussion of the

characteristics of the nation or period responsible for the material read. From the study of mythology the pupils compiled lists of mythological characters and creatures which they thought have an important relation to general reading. Throughout the course there was evidence that the pupils gained much from exchange of ideas. The burden of the recitation was carried by the class rather than by the teacher.

There were certain administrative difficulties. As the class was made up of pupils from three high-school grades, there were program conflicts. The group therefore decided to meet at half-past three in the afternoon. This was an inconvenient hour, but the privilege of entrance to the class was regarded as compensation. Three meetings a week were held instead of five, but discussion sometimes extended beyond the hour period allotted. Credit was given in whatever year the pupil had need. The present plan of the department calls for the offering of this special course once each year. A pupil who meets the English requirements in composition may enrol a second time with this free-reading group, since detailed individual records make it possible to avoid duplication. The department offers but one semester's work (elective) in the history of literature. The free reading is excellent preparation for this and is used as an alternative to the other reading course, which deals with types of literature. In schools requiring a year each of history of English literature and history of American literature more difficulty might be experienced in adjusting such a unit to the course as a whole.

The extra-class readings of one pupil follow. This particular list is chosen because it was presented by a pupil (a fifteen-year-old girl) who ranked "C" or average in the class. In addition to reading the books mentioned, all of which she discussed intelligently, she shared the class reading of a dozen plays and essays.

COLLATERAL READING OF AVERAGE PUPIL DURING SEMESTER

Guerber, *Myths of Greece and Rome*
Lang, *Tales of Troy and Greece*
Leland, *The Gypsies*
Aristophanes, "The Frogs"
Euripides, *Alcestis*
Dante, *The Inferno* (3 cantos)

Calderón, *Life Is a Dream*
Cervantes, *Don Quixote* (in part)
About, *King of the Mountains*
Hugo, *Les Misérables*
Ibsen, *Pillars of Society*
De Maupassant, short stories (30)
Maeterlinck, *The Blue Bird*
Barrie, *A Kiss for Cinderella*
Sheridan, *The Rivals*
Conrad, *Lord Jim*
Dickens, *The Old Curiosity Shop*
Hawthorne, *The Scarlet Letter*
Kipling, *The Light That Failed*
Stevenson, *Strange Case of Doctor Jekyll and Mr. Hyde*

It is not the purpose of this article to present a thesis for this particular course in reading nor for the method used in its teaching. The statements regarding the course and its conduct are offered merely as proof that pupils who are fond of reading and who have established habits of reading for pleasure may be found to profit by work of a sort entirely beyond that of the average high-school class. It is easily possible that other pupils in the school from which these were chosen could have enjoyed a careful class discussion of many of the books read by this special class. It is, however, exceedingly doubtful whether many could have read with sufficient ease and enjoyment to have found this course or this type of course an open door to future leisure-time reading. The same criteria revealed a group of less rapid and generally less capable readers who were reading steadily in leisure periods. These pupils also would probably have been able to profit by a course in exploratory reading, a course somewhat less pretentious but equally valid. A third group was composed of those pupils whose outside reading was negligible and whose rate of reading, comprehension, and vocabulary were markedly below what their mental ability would indicate as normal. Only one or two of these pupils made any claims to outside reading, and in every case such reading was confined to an extended acquaintance with but one or two writers. It appears to be folly to expect such pupils to enjoy reading until it becomes less difficult for them.

In part as a result of the experiment with superior readers, the

English department is attempting to meet the needs of the least-skilled group through a course in remedial reading. Two methods are used: (1) quantity reading of simple material to increase speed and (2) class reading, conducted with full consideration of rate difficulties, to increase comprehension. Results are not yet evident save in the growth of pupil interest. This course, dealing with mechanics and habit formation, is scheduled for nine months.

Further experimentation should add other and more reliable criteria for classifying pupils with regard to reading ability, but the writer is convinced that, if these tests—vocabulary, rate of reading, comprehension, summer-reading records, general interpretation, and intelligence—are employed, it will be possible to develop a grouping based on ability and closely related to professed objectives.

Educational Writings

REVIEWS AND BOOK NOTES

A contribution to the psychology of arithmetic.—The fact that more pupils in the lower grades fail in arithmetic than in any other school subject shows that arithmetic is difficult to master. It has been the motive for many extensive studies aiming to improve the teaching of the subject. Indeed, the efforts of the investigators within the last two generations have resulted in revolutionizing the methods of teaching number in the early grades. The old methods of teaching have been completely abandoned, but the real solution of the problem has not yet been found. Arithmetic has continued to be difficult because the newer methods also are ineffective.

What is needed is to help the teacher understand the nature and complexity of arithmetical concepts and processes. Analysis of textbooks, studies of the results of tests, and curriculum investigations have supplied much valuable information but have failed to reveal what is most necessary from the standpoint of the teacher, namely, a detailed analysis of the mental processes involved in learning number ideas and number combinations. Only through research will teachers become conscious of the problem and modify instruction. Without it, teaching must continue to proceed blindly.

Every teacher and every supervisor of the teaching of arithmetic will therefore be vitally interested in a recent investigation,¹ which is by far the most outstanding contribution in the field of psychological analysis of number ideas. The teacher must learn to understand the mental processes involved in acquiring knowledge of number in order to be able to guide the pupil effectively.

The major part of the monograph is devoted to an analysis of the counting process. Tests in counting were made with sounds, flashes of light, and tactual experiences. The tests were administered to children of the first six grades and to adults. The author presents a detailed analysis of individual cases.

Some very interesting tables are given which show the complexity of the process of counting, which is found to consist of three phases: (1) possession of a subjective series of number names or number reactions, (2) discrimination of the

¹ Charles Hubbard Judd, *Psychological Analysis of the Fundamentals of Arithmetic*. Supplementary Educational Monographs, No. 32. Chicago: Department of Education, University of Chicago, 1927. Pp. x+122.

individual items of an objective series, (3) application of the number names to the items in the objective series. The problem of the teacher is to discover in which of these phases lies the pupil's difficulty in counting and to take proper remedial measures. Counting is more than native ability. Training in the various phases is a vital factor in acquiring proficiency.

The investigation presents evidence showing why children are slow in learning the use of counting. Like the race, the child gradually arrives at, and needs sufficient time to gain, full personal appreciation of the meaning of the number series.

The following are typical examples of results presented by the author in an exceedingly interesting manner: wide differences in ability to count are exhibited by individuals; wide differences are shown in counting with different types of experiences; the complicated number names beyond "ten" increase the difficulty in counting; ability to count improves throughout the period of elementary education; counting silently is not very different from counting aloud; number ideas are acquired only when there is a positive reaction.

The second part of the study deals with the number combinations. Again the author shows how very complicated the subject of arithmetic is. Before the pupil could possibly have developed the necessary power of abstraction he finds himself confronted with this very elaborate number system. He is expected and required to use this system in a variety of ways in dealing with situations that are described in a multitude of terms that must be bewildering to him. For example, an analysis of the problems in addition in four textbooks yielded a list of 410 types of problem situations. Moreover, authors and teachers differ widely in arithmetical vocabularies and have their own concrete interests and devices, all of which must be exceedingly confusing to the learner. The situation in the other fundamental processes is not very different.

After reading the monograph, the teacher will be more sympathetic than before with the pupil who finds arithmetic difficult. The monograph will acquaint her with the psychological complexities of the subject. She will have a new motive for developing methods and providing ample explanations to help the pupil in his struggle to extract the abstract number ideas from the problems.

In conclusion, the author takes issue with those who advocate drastic reduction of arithmetic in reorganizing the curriculum. "The conclusions to which the study . . . leads are diametrically opposed to the doctrine that arithmetic should be reduced to a few exercises in practical calculation. . . . To reduce arithmetic to a few practical applications would be to neglect the general idea of precise thinking on which our mechanical and scientific civilization rests" (p. 116).

The author has presented his material in a clear and interesting manner, and those who are interested in the improvement of the teaching of arithmetic will find the monograph well worth studying.

E. R. BRESLICH

The improvement of instruction through supervision.—Supervision of classroom instruction has long been recognized as one of the major functions of public-school administration. Despite this fact, supervision has been both neglected and poorly carried out. The reasons are not difficult to find. In general, the practices of those engaged in supervision have been largely perfunctory and have not been developed or controlled by sound supervisory theory. The theories of supervision which have existed have been, for the most part, either inadequate or wrong. As a result, supervision has been unscientific and has not been able to command either the confidence of the supervisors or the respect of the supervised.

A recent book¹ sets a new landmark in the development of a science of supervision.

The purpose of the volume is to present the general problems, principles, and procedures of supervision. The material included has been drawn chiefly from three sources: *first*, the experience of the authors in teaching for several years past general introductory courses in the field of supervision and the improvement of teaching; *second*, the experience of the authors as supervisors and directors of supervision in various places; and, *third*, from an exhaustive and critical survey (a) of current practice in supervision and (b) of the literature in the field of supervision. Effort has been made to present a well-balanced, sound, and progressive theory, copiously supplemented by practical case material from the field [p. v.].

The book opens with an analysis of supervisory activities and a working definition of supervision. As set forth by the authors, the chief aim of supervision is "to further the pupil's learning and growth" (p. 21). Supervision as a process is therefore primarily concerned with the betterment of the conditions which affect learning. The acceptance of the foregoing objective of supervision opens the way for the development of a supervisory technique which seeks to realize indirectly its fundamental purpose through a direct attack on classroom teaching. The supervisor will visit a particular classroom in order (1) to diagnose the character of the classroom work, (2) to determine the nature of the aid which the conditions require, and (3) to create problem situations which will result in the growth of the teacher and the improvement of learning.

Chapters ii, iii, and iv deal with the administrative organization of supervision. Many plans in current use in various school systems are reported and critically examined. Objective data are presented when such are available. Generalizations are made when warranted, and principles are formulated for the guidance of those who are responsible for the organization and direction of supervisory programs. Sample programs are projected, and criteria are outlined for checking and testing the validity and effectiveness of the practices proposed. Chapters v-xiv, inclusive, deal with specific problems and aspects of supervision: "Studying the Work of the Teacher," "The Improvement of Teaching through Visitation," "The Improvement of Teaching through Better Selection

¹ A. S. Barr and William H. Burton, *The Supervision of Instruction*. New York: D. Appleton & Co., 1926. Pp. xiv+626.

and Organization of Subject Matter," "The Selection and Standardization of the Materials of Instruction," "The Use of Educational Tests and Measurements in the Improvement of Teaching," "The Improvement of Teaching through Research and Experimentation," "General Devices for the Improvement of Teachers in Service," "Evaluating the Efficiency of Teaching," "Evaluating the Efficiency of Supervisors," and "The Training and Personality of Supervisors." In each of these chapters the reader will find the best of current practices described and critically evaluated in the light of the controlling theory of supervision developed and adhered to by the authors.

The text closes very fittingly with a chapter devoted to "The Scientific Study of Supervision." The authors discuss the application of scientific method to the problems of supervision. Examples are given to illustrate the phases of supervision which have been and are being studied. Problems are pointed out for further study by supervisors and research students. In brief, the chapter presents a vigorous challenge to supervisors and administrators to aid in the development of a science of supervision.

Superintendents, principals, and special supervisors will find in the book a comprehensive, modern treatment of supervision. While it could hardly be said that the authors have advanced supervision to a place among the established sciences, they have without doubt contributed more in the aggregate toward making supervision scientific than all the other textbook-writers in the field. The book should be studied by every person who assumes to discharge supervisory functions. It fills a place in professional literature which has been conspicuous for many years because of the inferior and superficial treatments of the subject.

W. C. REAVIS

The improvement of supervisory practice.—The improvement of classroom teaching by the supervisor is a problem which has puzzled practical educators for some time. Most of the more progressive school systems have tried some plan or other in an effort to secure such improvement, and certain school systems have tried several different schemes. The problem is probably more troublesome today than ever before. Leading schools of education are studying it, and much of the best thought of the country is directed toward its solution.

A recent book¹ dealing chiefly with this phase of education differs from most others in its field. It is divided into two parts. Part I deals with "The Improvement of Supervision Theory"; Part II, with "The Improvement of Supervision Practice." In the first part, which is composed of ten chapters, the author presents his views as to what education is, what its aims should be, and how these aims should be accomplished in the school. He outlines the theoretical relation between the ideas presented and the proper supervision of classroom instruction. In the second part he gives specific illustrations of how the theory in Part I

¹ Ellsworth Collings, *School Supervision in Theory and Practice*. New York: Thomas Y. Crowell Co., 1927. Pp. xvi+368. \$2.75.

should be put into practice, how the classroom situation should be handled, how the supervisor should function, and what the real relation between the supervisor and the teacher should be to make the teaching accomplish the most for the pupils. A number of charts and scales which the author has tried out are presented. An appendix includes stenographic reports of good and poor types of lesson procedure. A limited number of references for further study are recommended.

The author is plainly a follower of a particular school of educational philosophy. The names of Kilpatrick and McMurry appear many times, and their works are frequently quoted. Some of the statements made in introducing the subject will throw light on the ideas advocated. "It is time to free the intelligence of children from the bondage of the traditional school subjects" (p. 26). "Education is through purposeful activity" (p. 23). In the ordinary school "emphasis is entirely focused upon building knowledge and skill to the neglect of building attitudes" (p. 41). Growth, purposeful activity, a stimulating goal, inner drive, the stimulation of success, and the ability to lead on and to branch out into related fields constitute the key thoughts of the educational philosophy.

The work of the supervisor is outlined in some detail, especially the methods of dealing with the individual teacher. The gauging of the success of teaching in terms of pupil activity is fearlessly championed in a rather able manner. Considerable space is devoted to guidance in constructing and executing teaching procedures and in measuring the improvement of teaching. The conference of the supervisor with the individual teacher, its purpose, the preparation necessary, and successful procedures are discussed. One chapter is devoted to the weighty problem of introducing supervisory guidance into a school system.

It is evident that the author has studied his material carefully. Although there is a large amount of repetition in certain chapters, most of the book is interesting. There are a few points which exhibit weaknesses as well as several points which stand out as especially strong. The reader is expected to agree in full with the author's theories as advanced in Part I in order to put Part II into practice. The co-operation of all groups in the school system is taken for granted. The teacher-supervisor relations are clearly set forth in an admirable manner. The chief weaknesses of most teachers are discussed, and some excellent suggestions are presented for overcoming them. Child activity as opposed to teacher activity is insisted upon. The treatment should be of value to anyone working in the field of supervision as well as to administrators in general.

GEORGE R. MOON

Higher education in Indiana.—The common practice of early school surveyors was to reveal the educational shortcomings of a school system without attempting to suggest a definite program of remedial or follow-up work. The modern school survey is not considered complete unless an adequate program for bringing about educational reform is outlined.

The specific purpose of a recent survey¹ in Indiana was to determine whether the financial support, physical facilities, educational equipment, and teaching staffs of state schools of higher learning in Indiana are on a level with those in state institutions in comparable states.

The first chapter sets forth in summary form the answers to twelve questions that were presented to the survey commission by the governor of Indiana. The detailed data on which these answers were based are found in the other chapters of the report. The report in part discusses the following topics pertaining to institutions of higher learning: service rendered, location, preparation of public-school teachers, organization and administration, instructional load, faculties, plant and equipment, curriculums, non-campus services (extension classes and correspondence-study courses), and finance.

The facts discovered by the survey commission are of general interest. In 1925-26, in proportion to population, wealth, and income, Indiana spent only three-fourths as much for state-supported higher education as did six comparable states of the North Central group. However, Indiana was relatively generous in her support of elementary and secondary schools; the total taxes for governmental purposes, state and local, were relatively high. The present physical facilities of the four institutions surveyed—Indiana University, Purdue University, and two state normal schools—are reported inadequate for effective and economical work. The salaries paid and other conditions of service are not such as to enable the Indiana institutions to secure and retain faculties professionally comparable to those of the institutions of neighboring states. Because of the absence of adequate retirement provisions, the institutions experience difficulties in securing competent instructors and in some cases are obliged to retain instructors who have reached the normal age of retirement. Indiana institutions enrol a greater percentage of the high-school graduates of the state than do institutions in other states of the North Central group but do not retain the students as well. The funds wasted as a result of faulty institutional organization and administration and of needless duplication of offerings within a given institution or among state institutions are commendably small in amount. The average instructional load and the average service load are relatively high. The survey commission suggests that, unless the state is willing to spend a much larger sum on its two universities than has been appropriated in recent years, substantial increases will have to be made in student fees. Attention is directed to income as a legitimate source of funds for institutions of higher learning.

The report includes forty-eight tables and five figures. The data presented do not show the state-supported institutions of higher education of Indiana in a favorable light. However, the officials responsible for initiating the investigation merit commendation for inquiring into educational conditions and reporting the true state of affairs. If given due consideration by the citizens and law-makers of Indiana, the facts revealed should result in a much needed increase in appro-

¹ *Report of a Survey of the State Institutions of Higher Learning in Indiana*. Indianapolis, Indiana: Board of Public Printing, 1926. Pp. 206.

priations for the state institutions of higher learning. Increased financial support should go far toward bringing about the desired improvement in conditions in higher education.

MIAMI UNIVERSITY

CARTER V. GOOD

The Far East in high-school history courses.—The teacher or student of current problems and their historical background finds his attention directed more and more frequently toward Asia and the Far East. The magazines and daily papers of our Western World devote an increasing amount of space to the oriental stage, where a drama is being enacted involving all the forces and tendencies of four thousand years of world-history. What has this to do with the teaching of history in American high schools? A recent textbook in history¹ answers the question in this way:

In the days of international isolation it was immaterial whether or not the peoples of different civilizations had a sympathetic understanding of each other. However, with the meeting of East and West in the region of the Pacific, and with the constantly growing intercourse between the nations of the Occident and the Orient, it has become necessary for national systems of education to furnish the different peoples with knowledge of one another's cultures, as a basis of mutual understanding and mutual respect [p. v].

The book attempts to meet the foregoing need by interpreting eastern culture and problems for western students. The task is difficult, but it is accomplished remarkably well. The thirty-one chapters of the book are arranged in five major parts. Part I, "The Beginnings of Oriental Civilization," has an introductory chapter on "Peopling of Eastern and Southern Asia," followed by chapters dealing with each of the three centers of Asiatic culture—China, India, and Malaysia. Part II, "Development of Culture and Growth of Empires," carries the story of Asiatic growth down to the end of the Twelfth Century, A.D., in chapters on India, China, Korea, Japan, Malaysia, and the Arab contacts with the East. Part III, "Culmination and Decline of Imperial Expansion," contains seven chapters dealing with events of the years from 1200 to 1550. It sets the stage for the development of European and American influence in the Orient. Parts IV and V treat the relations of the East and West; they are, respectively, "Extension of European Influence in the Orient (1550-1860)" and "Development of Oriental Resistance to the Aggressions of the West (1860-1926)." Part IV deals with the Portuguese, Dutch, Spanish, English, French, and Russian invasion of the Orient. It has a particularly good chapter on "The Reopening and Westernization of Japan." Part V has six chapters: "American Influence Enters the Orient; The Philippines Secure Self-Government"; "China's Struggle against Foreign Aggression and Internal Disorders"; "Japan as a World Power; The End of Korea"; "China: The Revolution, the Republic, and the New Nationalism"; "The New Liberal Policy in the Dutch East Indies,

¹ G. Nye Steiger, H. Otley Beyer, and Conrado Benitez, *A History of the Orient*. Boston: Ginn & Co., 1926. Pp. x+470. \$1.96.

French Indo-China, and British India; Siam Remains Independent"; and "Recent Events in the Orient."

The entire book is eminently fair in its presentation of the points of view of two different civilizations. For the most part, the book is ably written although occasionally vague. Generally speaking, the material on China is presented in much better form than the material dealing with other nations. The chapters introductory to Malaysian development probably are too controversial and vague to be satisfactory for high-school use; high-school pupils will find most of the other chapters very readable. Naturally, in the study of the Orient, American pupils have to make frequent and intensive use of maps; the text provides excellent maps for this purpose. The pronunciation of oriental terms is an outstanding difficulty for occidental pupils, but this difficulty is provided for in the pronunciation markings given in the Index.

The authors have designed the book for use not in a separate and new course in Asiatic history but for use as a collateral volume in courses in world-history. Running references to *Our World Today and Yesterday* by Robinson, Smith, and Breasted are given in footnotes throughout the text. The book will be found of some value in courses in ancient and medieval history, especially since it traces the migrations of barbarian peoples. It has excellent collateral material on the age of exploration. Its chapters on the opening of Japan, the development of the Philippines, and recent events in China will enrich courses in American history, but its chief contribution to the content of high-school history courses lies in its discussion of imperialism and the expansion of industrial nations. Classes in modern world-history will find the book invaluable in this respect.

The book will serve its greatest purpose, then, as a collateral volume for classroom and library reading. It will prove stimulating to an alert teacher, especially one who is desirous of connecting historical movements with current events.

HOWARD E. WILSON

Selected historical readings.—*Readings from the Great Historians*^{*} is an English product. It reflects the English method of historical study, namely, less reliance on textbooks and more familiarity with secondary authorities than is the practice in America. It is an expression of the tutorial method and represents the recommendations of the tutor to his students with regard to the authors who are really worth while, with some suggestions as to how to begin to study history. One can discover from the plan of the editor that a given selection is looked upon not as an end in itself but as an introduction to the reading of the original work.

The book is divided into chapters, each representing some period of European history from the end of the Roman Empire to the eve of the French Revolution. Some of the topical headings represent units of study, as, for instance,

^{*} *Readings from the Great Historians*: European History from the Fall of Rome to the Eve of the French Revolution. Selected and edited by D. M. Ketelbey. Boston: Houghton Mifflin Co. Pp. 438. \$2.00.

"The Papal Hegemony" and "The Ascendency of France"; others are merely periods, as, for example, "The Christian World from 600 to 1000 A.D." Such chapters may have unity of subject matter, but it would seem that the content might be more definitely conveyed by the titles. The plan of the editor is to give in each chapter a historical introduction or an overview of the period or topic under consideration and to follow this by biographical sketches of the writers and these in turn by selections. The introductions to the selections are satisfactory and serve the purpose of such introductory material.

The editor has called his selections, *Readings from the Great Historians*. The list of authors in the Table of Contents conveys the impression that the book is somewhat provincial in its range of selections. The question naturally arises, Why not a larger representation of the continental historians? Gregorovius, von Sybel, and Sismondi hardly give the student a fair idea of the continental methods of writing and of the continental point of view. The list of writers is hardly representative even of the English historians, the names of Froude, Hallam, Buckle, Lecky, and others as well known not appearing. Without undue enlargement of the size of the book, its scope might well have been broadened to include the recent history of Europe. The French Revolution, with its galaxy of brilliant interpreters, would have offered an interesting comparative study in points of view, and the nationalist movement would have added to the list of the great.

The book might well be used for parallel reading in courses in European history in the senior high school or junior college. It is a good book to put in the hands of a pupil who is beginning the serious study of history. It might prove of interest to the casual reader. The total effect of the selections is pictorial, representing the pageant of history, the great historical occasions and events, the unique individuals, and the great men of action. The quality which has almost disappeared from our concise texts reappears here. In turning the pages, one is impressed by the dignity and measured tread of Gibbon, the impressionistic and vivid style of Carlyle, the graphic pictures of moving events by our own Prescott and Motley, and the skilful portrayal of character in the French memoirs.

The book might be looked upon as a manual in the art of historical exposition—a difficult art and of the greatest value to society. In the accumulation and evaluation of historical materials, we are in danger of losing sight of the later steps in the historical process by which materials are explicated—assimilation and exposition. The interested student may here observe the transformation which the historical materials, often so drab, undergo in passing through a great and original mind. The older historians lacked the advantages of the modern methods of investigation and co-operative work, but they had advantages which in a way compensated for these handicaps. They were in many cases men of action, with wide experience, sometimes statesmen in their own right, often men of letters, in some cases even poets or philosophers. Our students should not give less attention to accurate historical scholarship, but they may well give more attention to the art of historical presentation. In line with this tendency,

the young student of history will do well to form the habit of turning to the masters of historical writing for inspiration and instruction.

ARTHUR F. BARNARD

Rural-school administration.—Considerable interest has been shown in rural education in recent years, as indicated by the increasing amount of literature—good, bad, and indifferent—that has appeared in the field. Students of school administration have not, however, turned their efforts to the rural field as frequently as to the urban field. A recent book¹ dealing with rural-school administration is therefore of interest.

The author aims to evaluate the policies of organization and administration of schools in rural areas, to present the chief factors that aid rural education and those that hinder rural education, and to suggest methods of improvement.

The book is divided into four parts. In Part I, "The Major Problems in American Rural Education and a Point of View in Attacking Them," the author restricts his treatment to "small communities" of less than 2,500 inhabitants whether they are engaged in agriculture, lumbering, mining, or fishing; he shows that larger schools in themselves do not insure better results and that rural possibilities for significant contacts with nature do not insure such contacts. Familiar lists and discussions of educational objectives are given, ending with the seven objectives formulated by the Commission on the Reorganization of Secondary Education. The author objects to the term "rural mind" and says, "Rural people think, feel, and act much as other people do. Where differences exist, they are of degree, not of kind" (p. 46). Then he apparently uses another channel of thinking and presents evidence to support belief in "differences of kind."

Except in unusually favorable times, he [the farmer] cannot achieve more than a mere livelihood through activities largely on the level of habit. Many types of city workers have highly specialized jobs requiring only a limited number of activities. Not so with the farmer. Conditions with him are seldom the same. Varying snow and rainfall, a shortage of good seeds, premature frosts, pests and diseases, world supply and demand of products, and marketing conditions are illustrations of situations stimulating thought [pp. 54-55].

In Part II, "The Organization and the Administration of the Local School Unit," the author evaluates different types of local units; he shows that no one type will fit all conditions unless it is the "community unit." A comprehensive plan is given for determining the limits of a local community (pp. 115-24), and useful criteria are set up for judging the mutual obligations of community and school (p. 137). In discussing leadership in rural schools, the author properly holds that leadership is not purely an intellectual process, that it is subject to analysis and training, and that local initiative and leadership are not inherent in local control.

¹ Julian E. Butterworth, *Principles of Rural School Administration*. New York: Macmillan Co., 1926. Pp. xvi+380.

Important sections of Part II and of Part III, "The Organization and Administration of the Higher Units," are very much like the discussions of similar topics in the report of the New York rural-school survey. The author's discussion of "The Intermediate Unit" reflects Brooks; he follows Bobbitt on "division of functions between lay and professional people" and between units on different levels and then summarizes Bobbitt as follows: "Ultimate authority and responsibility moves from lay group to lay group; delegated authority, from professional group to professional group through or with the permission of the lay group" (p. 232). The author rightly feels that the state board of education should be composed of lay members and that for efficient executive functioning the state superintendent should not be a member of this board. He recommends that federal participation in education consist of leadership and financial aid without control.

In Part IV, "Financing Rural Schools," typical variations in the financial capacity of rural districts are reviewed. It is shown that rural districts have larger percentages of their populations of school age than do urban districts. After an evaluation of other methods of administering aid, Updegraff's plan is outlined in its essential aspects. The author is in general accord with Updegraff's basis of distributing aid: "the ability of the district to support schools as measured by its equalized valuation per teacher" and "the effort which the district makes . . . as measured by its tax rate"; he thinks its chief weakness is that it does not recognize differences in the cost of maintaining the same kind of school in different communities. In the opinion of the reviewer, another weakness of the plan lies in the fact that it is based on valuation rather than on income. Taxes are paid out of income, not out of valuation; the same valuations in different investments do not yield the same incomes.

The author's social approach to the problems discussed can be seen in the following quotations.

When more than one person is involved, there is more or less group consciousness, a realization that not oneself only but all the members are concerned and there is a tendency, therefore, to take the others into account in whatever action is contemplated. This does not mean that there is a "mind" outside of the different individuals in the group. However, each person, because of the stimulus of others, reacts more or less differently from the way that he would react alone or to an inanimate object [pp. 193-94].

This analysis should lead us to see the incompleteness of the rather widespread notion that leadership grows out of the qualities possessed by the leader rather than out of the demands of the environment [p. 197].

A bibliography of seven pages is presented at the end of the book; a short bibliography with brief annotations appears at the end of most of the chapters following a list of "Problems for Further Study." Specific references made in the text are indicated in footnotes. The book contains four appendixes, covering sixteen pages, and an index of four pages.

Because of the understanding of rural conditions shown and of the applica-

tion of the principles of school administration to these conditions, the book should prove helpful to administrators in rural districts, especially those new in the field. A careful reading of the book will also give students of education an insight into rural problems and a possible social approach to them.

H. H. PUNKE

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